

Service Manual

74 AV500/ 01B

AV Surround pre amplifier

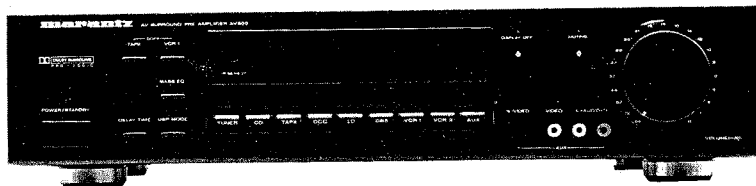


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marantz®

model AV500

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MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available at our National Marantz Subsidiary or Agent.

MARANTZ EUROPE B.V.
P.O. Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands
Phone : +31-40-732241
Fax : +31-40-735578

ORDERING PARTS

Parts can be ordered either by mail or by telex. In both cases, the correct part number has to be specified. The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which the part is required
5. Way of shipment
6. Signature: any order form or telex must be signed, otherwise such part order will be considered as null and void.

ADDRESSES

AUSTRALIA
MARANTZ AUSTRALIA
Figtree Drive
Australia Centre
Homebush, NSW 2140
AUSTRALIA

FINLAND
MARANTZ
Kuortanegatan 1
00520
Helsingfors 52
Finland

ITALY
MARANTZ ITALIANA SPA
Piazza IV Novembre 3
20124 Milano
Italy

NORWAY
MARANTZ
Postboks 7034
Assiden
3007 Drammen
Norway

SPAIN
MARANTZ SPAIN
Martinez Villergas 2
Apartado 2065
Madrid 28027
Spain

AUSTRIA
MARANTZ
Hietzinger Kai 137a
1130 Wien
Austria

FRANCE
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France

JAPAN
MARANTZ JAPAN INC.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

PORTUGAL
COREL
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211-2 Esq.
1200 Lisboa
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SWEDEN
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Box 1324
17125 Solna
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BELGIUM
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GERMANY
MARANTZ GERMANY GmbH
Kleine Heide 12
Postfach 4802
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Germany

KUWAIT
AL ALAMIAH ELECTRONICS
P.O.Box 8196
Salmiah
22052 Kuwait

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia

SWITZERLAND
MARANTZ SWITZERLAND
Postfach
8010 Zürich-Müllingen
Switzerland

CHILE
MARANTZ DIVISION OF
PHILIPS S.A.
Av.Santa Maria 0760
Casilla 2687
Santiago
Chile

GREAT BRITAIN
MARANTZ HiFi UK Ltd.
Kingsbridge House
Padbury Oaks
575-583 Bath Road
Longford Middlesex UB7 OEH,
U.K.

NETHERLANDS
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Building SFF 2
5600 JB Eindhoven
The Netherlands

SOUTH AFRICA
MARANTZ S.A.
10 Bond Street
Randburg 2194
P.O. Box 7703
Johannesburg 2000
South Africa

TRADING
MARANTZ TRADING
P.O.Box 20008
Building SFF 2
5600 JB Eindhoven
The Netherlands

DENMARK
MARANTZ
Horsvinget 5
2630 Tastrup
Denmark

GREECE
ADAMCO ELECTR. SA
P.O.Box 21025
Hippocratus Str. 188
Athens 11471
Greece

All of the above locations are fully equipped to take care of your total service needs or can advise you. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. TECHICAL SPECIFICATIONS

Audio

Input Sensitivity/ Impedance	150 mV/47 Kohm
Output Level/ Impedance	1.0V/ 600 ohms
Total Harmonic Distortion	0.006%
Crosstalk	76 dB/ 10 kHz
Audio Frequency Responce	10 Hz to 100 kHz (-3 dB)
Noise VOL MIN (Weighted)	3.5 μ V
VOL MAX (Weighted)	15 μ V
S/ N	90 dB
Dolby Surround Channel Separation	50 dB

Television Format	NTSC
Input Level/ Impedance	1 Vp-p/ 75 ohms
Output Level/ Impedance	1 Vp-p/ 75 ohms
Video Frequency Response	5 Hz to MHz (-3 dB)
S/ N	63 dB

DSP

Delay time	10 to 90 mS
------------------	-------------

General

Power Requirement	230/ 240 VAC, 50/ 60 Hz
Power Consumption	30 W
Dimensions	
Width	420 mm
Height	86 mm
Depth	336 mm
Weight	8.1 kg

Accessories

Remote Control Unit RC500AV	1
AA-size batteries	2
Stereo Pin cable	3

2. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing.

Item	Use
Distortion Analyzer	Distortion measurements
Audio Oscillator	Sinewave and squarewave signal source
ACVTVM	Voltage measurements (AC)
Oscilloscope	Waveform analysis and trouble shooting and ASO aignment
Circuit Tester	Trouble shooting
DCVTVM	Voltage measurements (DC)
AC Wattmeter	Monitors primary power to amplifier
Line Voltmeter	Monitors potential of primary power to amplifier
Variable Autotransformer	Adjust level of primery power to amplifier
Shorting Plug	Shorts amplifier input to eliminate noise pickup
NTSC TV Test Signal Generator	Color bar signal source
NTSC Vector Scope	Color phase monitor

3. SERVICE ROUTINE

HOW TO ACTIVATE THE SERVICE ROUTINE

While holding the CD and LD function keys on the front panel of the set, press the POWER switch to ON to activate the service routine.

The service routine starts with two cycles of alternate lighting of the SERVICE ROUTINE indicator and all FL dots on the FL display, then proceed to the series of operations as shown in the following table.

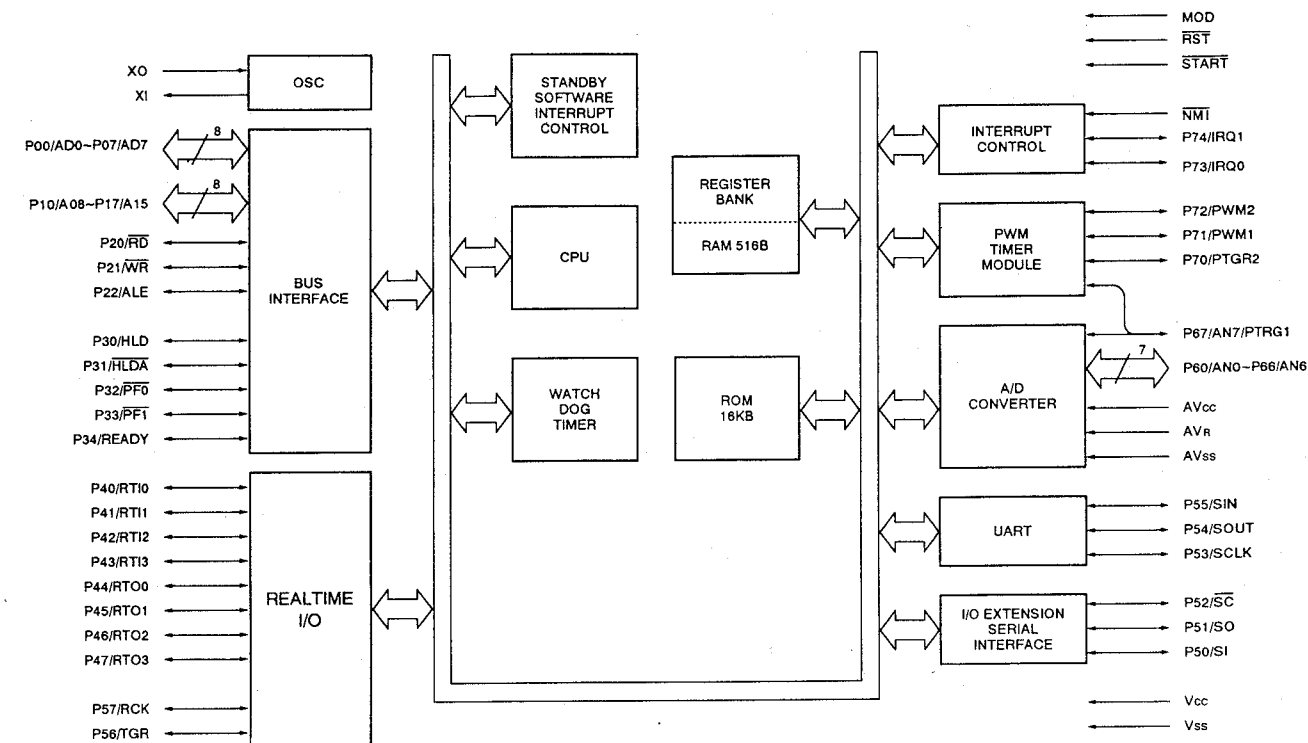
Caution: Before activating the service routine, be sure to input a desired video signal to the video input of the LD player.

Any of the service routine operations can be paused by pressing the MUTE switch.

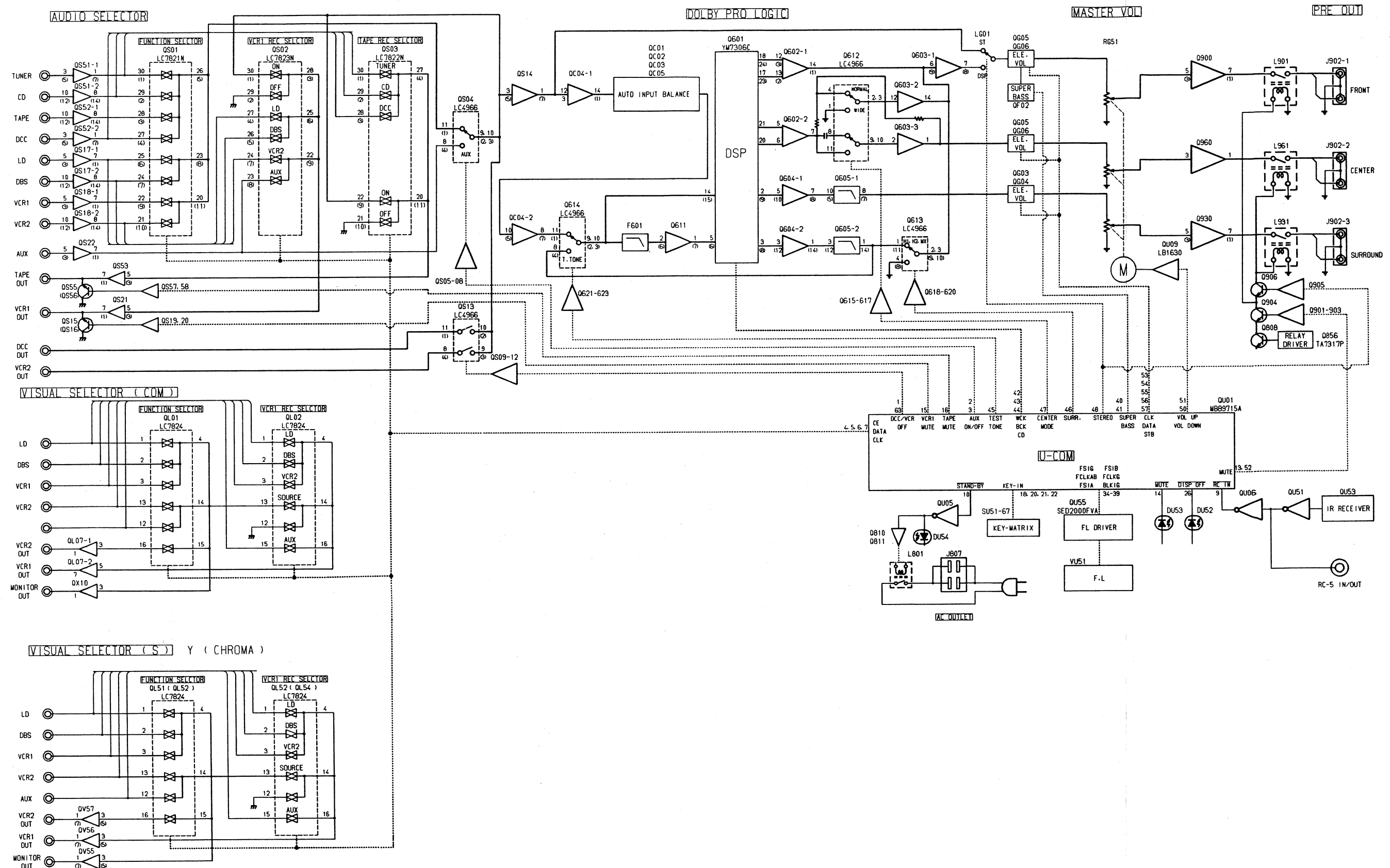
After the completion of service routine, the set returns to the initial state and normal operation mode.

	FUNCTION		DSP MODE	CENTER MODE	DELAY TIME	COPY		BASS EQ	MAIN	VOLUME		BAL
	AUDIO	VISUAL				TAPE	VCR1			CENT	REAR	
1	TUNER	LD	STEREO	OFF	0mSEC	SOUR	SOUR	OFF		-∞	-∞	CENT
2	CD	LD										
3	TAPE											
4	DCC											
5	LD											
6	DBS											
7	VCR1	VCR1	STEREO	OFF	0mSEC							
8	VCR2	VCR2										
9	AUX	AUX										
10	LD	LD										
11	TUNER	LD	DOLBY	NORMAL	20mSEC					-∞	-∞	
12				WIDE						-6dB	-6dB	
13				PHANTO						-6dB		
14				NORMAL						-∞		
15				WIDE						-6dB		
16					20mSEC							
17					25mSEC							
18					30mSEC							
19					15mSEC							
20					20mSEC							
21											-6dB	
22											0dB	
23											-∞	
24											-6dB	
25										-6dB		
26										0dB		
27										-∞		
28			DOLBY							-6dB		
29			MOVIE							-6dB	-6dB	
30			3ch							-6dB	-∞	
31			HALL1		20mSEC					-6dB	-6dB	
32					30mSEC					-∞		
33					40mSEC							
34					50mSEC							
35					60mSEC							
36					70mSEC							
37					80mSEC							
38					90mSEC							
39					0mSEC							
40					10mSEC							
41					20mSEC							
42			HALL1		30mSEC							
43			HALL2									
44			MATRIX									
45			STEREO									
46												
47												
48												
49												
50												
51												
52						SOUR						CENT
53						TUNE						
54						CD						
55						DCC						
56						SOUR	SOUR					
57							LD					
58							DBS					
59							VCR2					
60							AUX					
61							SOUR					
62												CENT
63												
64												
65												
66												
67												
68												
69												
70												
71	TUNER	LD	STEREO	WIDE	30mSEC	SOUR	SOUR	7dB	UP DOWN	-∞	-∞	CENT

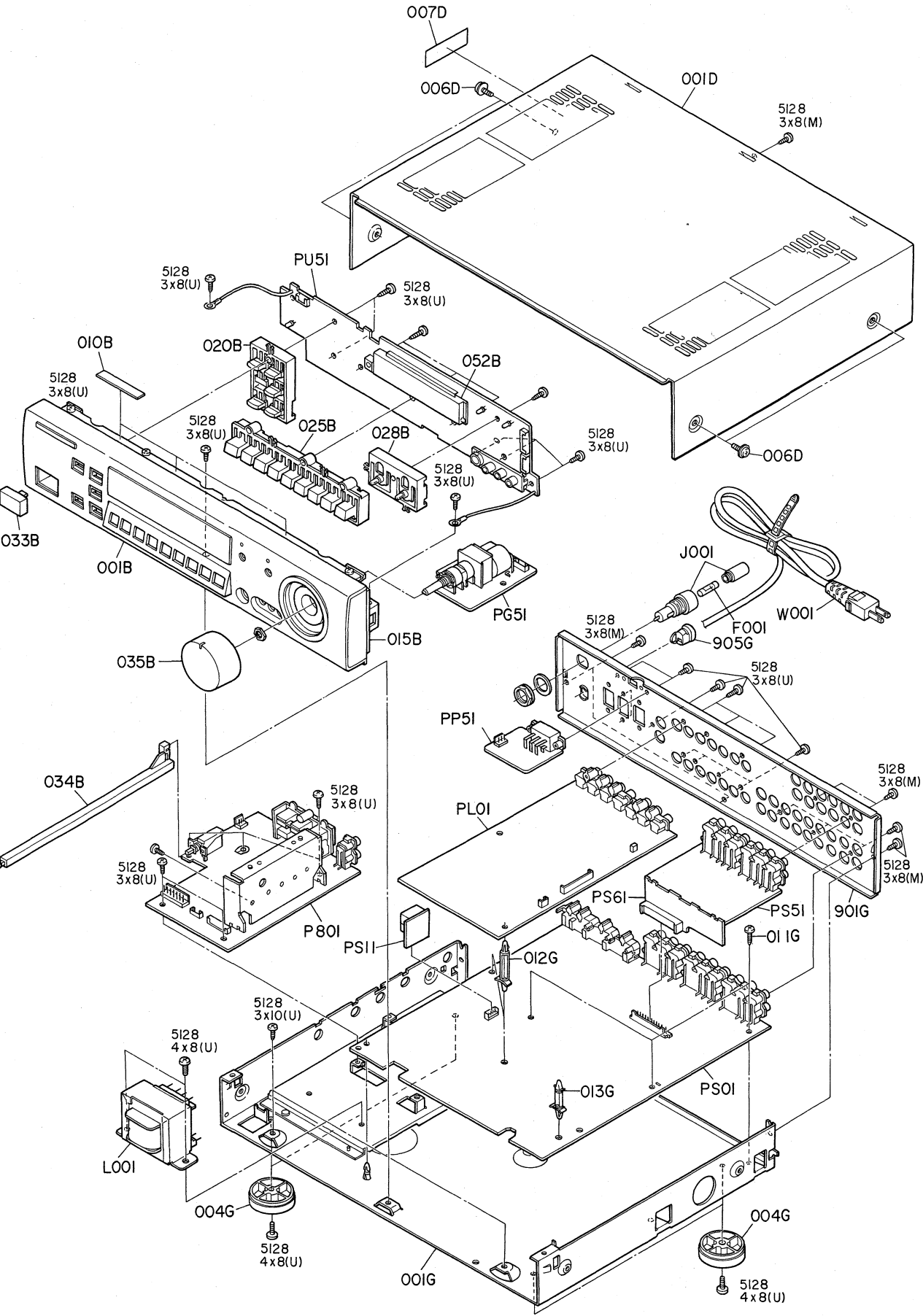
4. MICROPROCESSOR I/O PINS AND THEIR FUNCTIONS



5. BLOCK DIAGRAM



6. EXPLODED VIEW AND PARTS LIST



REF. DESIG.	PART NO.	DESCRIPTION
001B	4822 426 51665	Front Panel Assembly
015B	4822 464 90772	Chassis Assembly, Front
020B	4822 410 62732	Button, Copy
025B	4822 410 62731	Button, Function
028B	4822 417 11197	Hinge Assembly, DIS/ MUT
033B	4822 410 60194	Button, Power/ Standby
034B	4822 402 50237	Link., Power
035B	4822 413 41679	Knob, Main Volume
006D	4822 501 11008	B.T. Screw (W/ W) M4 x 8
004G	4822 462 41932	Leg
011G	4822 502 12355	B.T. Screw (W/ W) M3 x 8
905G	4822 532 60948	Bushing, AC Cord
▲ F001	4822 253 40203	Fuse 0.2A 250V
▲ J001	4822 256 30233	Jack, Fuse Holder
▲ L001	4822 146 21741	Power Transformer
Z001	4822 218 10517	Unit (K), Remocon
Z003	4822 321 21438	Connective Cord
Z004	4822 321 21438	Connective Cord
Z005	4822 321 21438	Connective Cord
001T	4822 736 21786	User Manual

7. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R***: (1) GD05 x x x 140, Carbon film fixed resistor, $\pm 5\%$ 1/4W
R***: (2) GD05 x x x 160, Carbon film fixed resistor, $\pm 5\%$ 1/6W

① — Resistance value

Examples:

① Resistance value

0.1 Ω ...001 10 Ω ...100 1k Ω ...102 100k Ω ...104
0.5 Ω ...005 18 Ω ...180 2.7k Ω ...272 680k Ω ...684
1 Ω ...010 100 Ω ...101 10k Ω ...103 1M Ω ...105
6.8 Ω ...068 390 Ω ...391 22k Ω ...223 4.7M Ω ...475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C***: CERAMIC CAP.

(1) DD1x x x x 370, Ceramic capacitor
Disc type
Temp.coef. P350~N1000, 50V

① ②
Capacity value
Tolerance

Examples

① Tolerance (Capacity deviation)

$\pm 0.25\text{pF}$...0
 $\pm 0.5\text{pF}$...1
 $\pm 5\%$...5

* Tolerance of COMMON PARTS handled here are as follows:

0.5pF~ 5pF... $\pm 0.25\text{pF}$
6pF~ 10pF... $\pm 0.5\text{pF}$
12pF~ 560pF... $\pm 5\%$

② Capacity value

0.5pF...005 3pF...030 100pF...101
1pF...010 10pF...100 220pF...221
1.5pF...015 47pF...470 560pF...561

C***: CERAMIC CAP.

(1) DK16 x x x 300, High dielectric constant ceramic capacitor
Disc type
Temp.chara. 2B4, 50V

①
Capacity value

Examples

② Capacity value

100pF...101 1000pF...102 10000pF...103
470pF...471 2200pF...222

C***: ELECTROLY CAP. (E), FILM CAP. (F)

(1) EA x x x x x 10, Electrolytic capacitor
One-way lead type, Tolerance $\pm 20\%$

① ②
Working voltage
Capacity value

Examples

① Capacity value

0.1 μF ...104 4.7 μF ...475 100 μF ...107
0.33 μF ...334 10 μF ...106 330 μF ...337
1 μF ...105 22 μF ...226 1100 μF ...108
2200 μF ...228

② Working voltage

6.3V...006 25V...025
10V...010 35V...035
16V...016 50V...050

(2) DF15 x x x 350, Plastic film capacitor
One-way type, Mylar $\pm 5\%$ 50V

①
Capacity value

Examples

① Capacity value

0.001 μF (1000pF)...102 0.1 μF ...104
0.0018 μF ...182 0.56 μF ...564
0.01 μF ...103 1 μF ...105
0.015 μF ...153

NOTE: The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.
On the occasion, be confirmed the common parts on the parts list.

REF. DESIG.	PART NO.	DESCRIPTION
CG51	4822 122 40617	PG51-MAIN VR CIRCUIT BOARD
RG51	4822 100 12048	Ceramic Cap. 0.1 μF +80% -20%
		100K Ω (D) x 5, Variable
		PL01-VIDEO CIRCUIT BOARD
		PL01-CAPACITORS
CL12	4822 122 40617	Ceramic 0.1 μF +80% -20%
CL17	4822 122 40617	Ceramic 0.1 μF +80% -20%
CL20		
		PL01-CAPACITORS (COMMON)
		Electrolytic Capacitor, $\pm 20\%$: CL01~CL06, CL08~CL11, CL13 CL15, CL21
		PL01-RESISTORS (COMMON)
		Carbon Film Fixed Resistor, $\pm 5\%$ 1/6W: RL01~RL12, RL14, RL15, RL16, RL25, RL26, RL30, RX30
		PL01-SEMICONDUCTORS
QL01	4822 209 31538	IC LC7824
QL02	4822 209 31538	IC LC7824
QL07	4822 209 32513	IC MC14576, Video Amp
QX10	4822 209 32513	IC MC14576, Video Amp
		PL01-MISCELLANEOUS
FX01	4822 158 60605	Ferrit Core
JL01	4822 265 30865	Terminal, 3P; RCA
JL02	4822 290 61178	Terminal, 4P; RCA
JL03	4822 267 31035	Jack, 2P
		PP51-VOLTAGE SELECT CIRCUIT BOARD
SP51	4822 277 21465	Slide Switch, Voltage Select
		PS01-DOLBY U-COM FUNCTION CIRCUIT BOARD
		PS01-CAPACITORS
CF05	4822 122 32486	Ceramic 0.01 μF +80% -20%
CF06	4822 122 32486	Ceramic 0.01 μF +80% -20%
CS15	4822 122 40617	Ceramic 0.1 μF +80% -20%
CS16	4822 122 40617	Ceramic 0.1 μF +80% -20%
CS21	4822 122 40617	Ceramic 0.1 μF +80% -20%
CU01	4822 124 23295	Big Elect 0.022F
CU06	4822 122 40617	Ceramic 0.1 μF +80% -20%
CU07	4822 122 40617	Ceramic 0.1 μF +80% -20%
CU08	4822 124 22694	Elect 100 μF 6.3V
CU09	4822 122 40617	Ceramic 0.1 μF +80% -20%
CU10	4822 122 40617	Ceramic 0.1 μF +80% -20%
CV61	4822 122 32486	Ceramic 0.01 μF +80% -20%
CV66		
CV69	4822 122 40617	Ceramic 0.1 μF +80% -20%
CV70	4822 122 40617	Ceramic 0.1 μF +80% -20%
C629	4822 122 31349	Ceramic 68pF $\pm 5\%$
C630	4822 122 31349	Ceramic 68pF $\pm 5\%$
C631	4822 122 31349	Ceramic 68pF $\pm 5\%$
C643	4822 122 40617	Ceramic 0.1 μF +80% -20%
C644	4822 122 40617	Ceramic 0.1 μF +80% -20%
C901	4822 124 22274	Elect 4.7 μF 50V
C902	4822 124 22274	Elect 4.7 μF 50V
C905	4822 124 22274	Elect 4.7 μF 50V

REF. DESIG.	PART NO.	DESCRIPTION
C906	4822 124 22274	Elect 4.7 μF 50V
C909	4822 122 40617	Ceramic 0.1 μF +80% -20%
C931	4822 124 22274	Elect 4.7 μF 50V
C932	4822 124 22274	Elect 4.7 μF 50V
C935	4822 124 22274	Elect 4.7 μF 50V
C936	4822 124 22274	Elect 4.7 μF 50V
C961	4822 124 22274	Elect 4.7 μF 50V
C965	4822 124 22274	Elect 4.7 μF 50V
		PS01-CAPACITORS (COMMON)
		High Dielectric Constant Ceramic Capacitor, 50V: C603, C604, C609, C610, C615, C616, C621~C624, C637, C638, C639, C903, C904, C911, C912, C933, C934, C937, C938, C963, C967
		Electrolytic Capacitor, $\pm 20\%$: CC02, CC03, CC05~CC08, CF01~CF04, CG01~CG17, CS01~CS14, CS17~CS20, CU02, CU03, CU05, CV51~CV60, CV67, CV68, CV71, CV72, C601, C602, C605, C606, C619, C620, C627, C628, C632~C635, C640, C641, C642, C645, C647, C650, C651, C653~C660, C907, C908, C913
		Plastic Film Capacitor, $\pm 5\%$ 50V: CC01, CC04, C607, C608, C611~C614, C617, C618, C625, C626, C636, C646, C652
		PS01-RESISTORS
RC05	4822 050 23308	3.3M Ω $\pm 5\%$ 1/6W
RC06	4822 050 23308	3.3M Ω $\pm 5\%$ 1/6W
RC07	4822 050 23308	3.3M Ω $\pm 5\%$ 1/6W
R640	4822 111 30816	120 Ω $\pm 5\%$ 1/4W
R668	4822 050 22209	22 Ω $\pm 5\%$ 1/4W
R671	4822 050 21501	150 Ω $\pm 5\%$ 1/4W
R672	4822 050 21501	150 Ω $\pm 5\%$ 1/4W
R919	4822 116 60348	270 Ω $\pm 5\%$ 1W
R981	4822 116 83929	220 Ω $\pm 5\%$ 1/4W
R982	4822 116 83929	220 Ω $\pm 5\%$ 1/4W
		PS01-RESISTORS (COMMON)
		Carbon Film Fixed Resistor, $\pm 5\%$ 1/6W: RC01~RC04, RC08~RC14, RF06, RF07, RF09~RF20, RG01~RG21, RS01~RS50, RU01~RU04, RU08~RU13, RU15, RU16, RU18, RU19, RV51~RV61, RV64, RV65, RV68, RV69, RV72, RV73, RV76, RV77, RV80, RV81, RV84~RV94, R601~R639, R641~R653, R657~R667, R901~R910, R913~R918, R931, R933~R940, R943~R948, R963, R965, R967, R969, R973, R975, R977
		PS01-SEMICONDUCTORS
DC01	4822 130 33305	Diode 1SS176, etc.
DC02	4822 130 33305	Diode 1SS176, etc.
DC03	4822 130 33305	Diode 1SS176, etc.
DF01	4822 130 80317	Zener RD5.1JB2/MTZJ5.1B
DF02	4822 130 80317	Zener RD5.1JB2/MTZJ5.1B
DG01	4822 130 32508	Diode RL103E/DSF10C
DU01	4822 130 33305	Diode 1SS176, etc.
DU02	4822 130 33305	Diode 1SS176, etc.
DU03	4822 130 33305	Diode 1SS176, etc.
DU04	4822 130 33305	Diode 1SS176, etc.
DU05	4822 130 32508	Diode RL103E/DSF10C
DU09	4822 130 80839	Diode S5688G
DU10	4822 130 80839	Diode S5688G

REF. DESIG.	PART NO.	DESCRIPTION
D601	4822 130 33305	Diode 1SS176, etc.
D610		
D903	4822 130 80839	Diode S5688G
D904	4822 130 80839	Diode S5688G
QC01	4822 209 83679	IC NJM2904, Dual OP-Amp
QC02	4822 209 83684	IC NJM072D
QC03	4822 209 83167	IC TDA1074A, Electronic Vol.
QC04	4822 209 70044	IC NJM2058D
QC05	4822 130 63378	F. E. T. 2SK117 (GR)
QF02	4822 209 61677	IC TC4052, C-MOS
QF03	4822 130 42298	Transistor 2SC536SP, etc.
QF04	4822 130 42298	Transistor 2SC536SP, etc.
QG01	4822 209 31575	IC TC9213P, Electronic Vol. 2H
QG02	4822 209 83627	IC NJM4560D
QG03	4822 209 31575	IC TC9213P, Electronic Vol. 2H
QG04	4822 209 83631	IC NJM4558DD
QG05	4822 209 31575	IC TC9213P, Electronic Vol. 2H
QG06	4822 209 83631	IC NJM4558DD
QG07	4822 130 60588	Transistor, digital DTC114ES
QG08	4822 130 61227	Transistor, digital DTA114ES
QS01	4822 209 32552	IC LC7821N, Analog SW
QS02	4822 209 32554	IC LC7823N, Analog SW
QS03	4822 209 32553	IC LC7822N, Analog SW
QS04	4822 209 83804	IC LC4966
QS05	4822 130 61227	Transistor, digital DTA114ES
QS06	4822 130 61227	Transistor, digital DTA114ES
QS07	4822 130 60588	Transistor, digital DTC114ES
QS08	4822 130 60588	Transistor, digital DTC114ES
QS09	4822 130 61227	Transistor, digital DTA114ES
QS10	4822 130 61227	Transistor, digital DTA114ES
QS11	4822 130 60588	Transistor, digital DTC114ES
QS12	4822 130 60588	Transistor, digital DTC114ES
QS13	4822 209 83804	IC LC4966
QS14	4822 209 83631	IC NJM4558DD
QS15	4822 130 43818	Transistor 2SC2878 (A)
QS16	4822 130 43818	Transistor 2SC2878 (A)
QS17	4822 209 70044	IC NJM2058D
QS18	4822 209 70044	IC NJM2058D
QS19	4822 130 61227	Transistor, digital DTA114ES
QS20	4822 130 60588	Transistor, digital DTC114ES
QS21	4822 209 83631	IC NJM4558DD
QS22	4822 209 83631	IC NJM4558DD
QU01	4822 209 32556	Microprocessor MB89715A
QU02	4822 209 32551	IC MB3771
QU04	4822 130 60588	Transistor, digital DTC114ES
QU05	4822 130 61227	Transistor, digital DTA114ES
QU06	4822 130 42298	Transistor 2SC536SP, etc.
QU09	4822 209 73287	IC LB1630
QV51	4822 209 31538	IC LC7824
QV52	4822 209 31538	IC LC7824
QV53	4822 209 31538	IC LC7824
QV54	4822 209 31538	IC LC7824
QV55	4822 209 32513	IC MC14576, Video Amp
QV56	4822 209 32513	IC MC14576, Video Amp
QV57	4822 209 32513	IC MC14576, Video Amp
Q601	4822 209 32549	IC YM7306C
Q602	4822 209 70044	IC NJM2058D
Q603	4822 209 70044	IC NJM2058D
Q604	4822 209 70044	IC NJM2058D
Q605	4822 209 70044	IC NJM2058D
Q609	4822 209 71373	IC NJM78L05A
Q610	4822 209 31631	IC NJM7805FA
Q611	4822 209 83631	IC NJM4558DD
Q612	4822 209 83804	IC LC4966
Q613	4822 209 83804	IC LC4966
Q614	4822 209 83804	IC LC4966
Q615	4822 130 42594	Transistor, digital DTC144ES
Q616	4822 130 42594	Transistor, digital DTC144ES
Q617	4822 130 61227	Transistor, digital DTA114ES
Q618	4822 130 42594	Transistor, digital DTA114ES
Q619	4822 130 42594	Transistor, digital DTC144ES
Q620	4822 130 61227	Transistor, digital DTA114ES
Q621	4822 130 42594	Transistor, digital DTC144ES
Q622	4822 130 42594	Transistor, digital DTC144ES

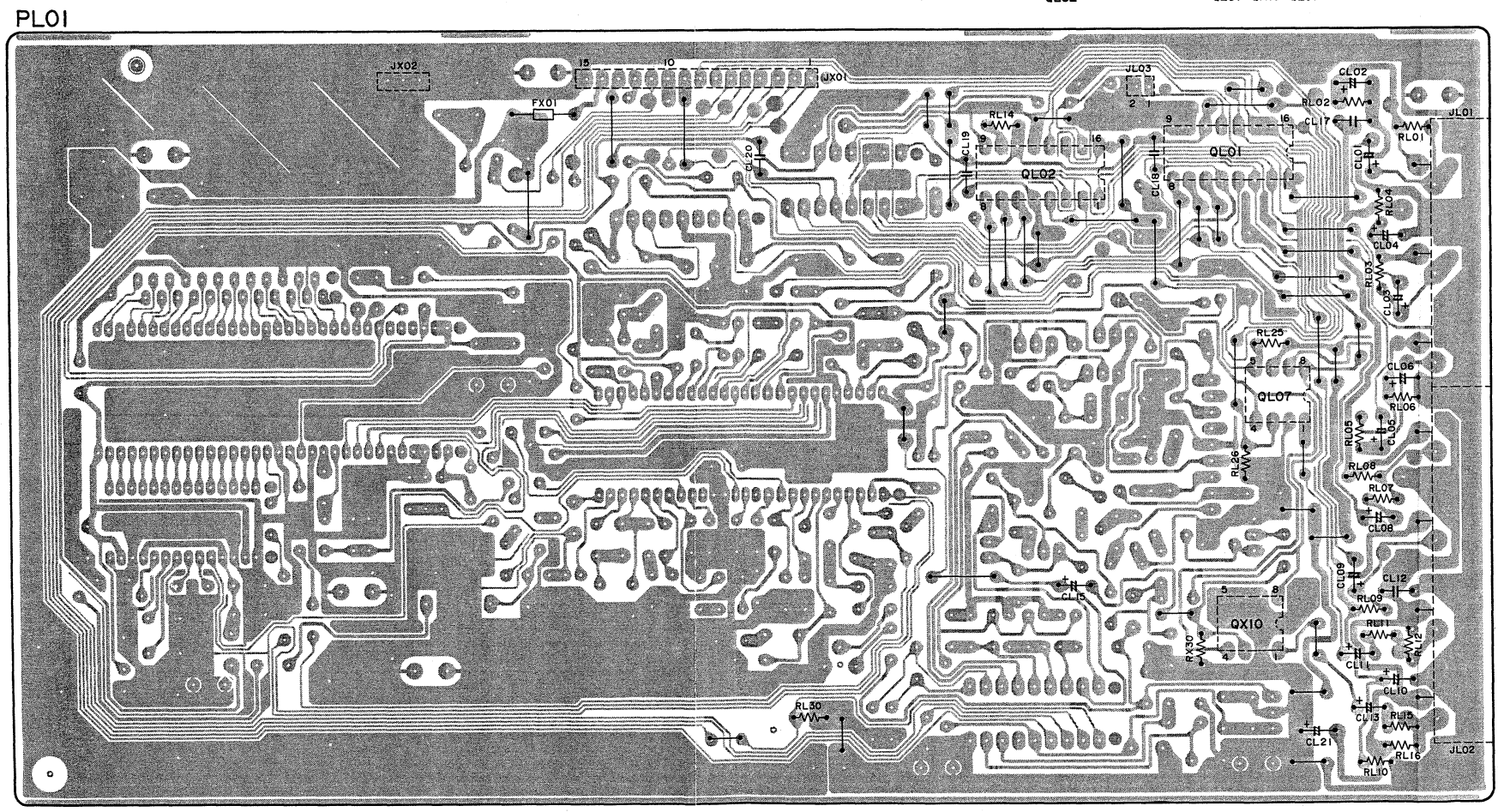
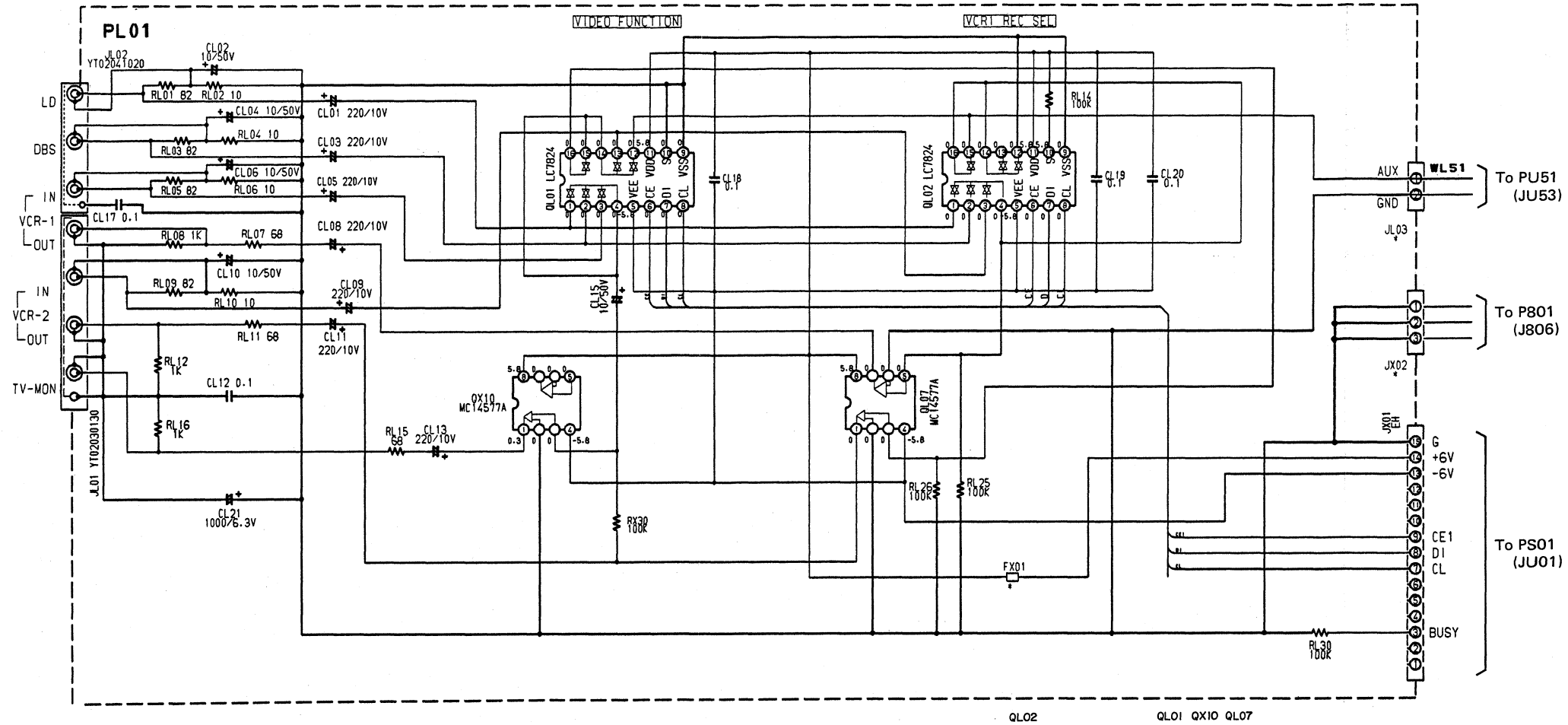
REF. DESIG.	PART NO.	DESCRIPTION
Q623 Q624 Q900 Q901 Q902 Q903 Q904 Q905 Q906 Q930 Q960	4822 130 61227 4822 209 32444 4822 209 73064 4822 130 42594 4822 130 42594 4822 130 61227 4822 130 60588 4822 130 61227 4822 130 60588 4822 209 73064 4822 209 73064	Transistor, digital DTA114ES IC V53C464AP80 IC NJM2068DD Transistor, digital DTC144ES Transistor, digital DTC144ES Transistor, digital DTA114ES Transistor, digital DTC114ES Transistor, digital DTA114ES Transistor, digital DTC114ES IC NJM2068DD IC NJM2068DD
PS01-MISCELLANEOUS		
JS03 JS04 JS06	4822 290 81407 4822 290 81407 4822 265 40929	Terminal, 6P Terminal, 6P Plug, 18P
JV51 JV52 JV53	4822 290 61176 4822 290 61176 4822 290 61177	Terminal, 2P Terminal, 2P Terminal, 3P
J902	4822 290 81407	Terminal, 6P
LG01	4822 280 20501	Relay MR62-24SR 24V
L901 L931 L961	4822 280 20196 4822 280 20196 4822 280 20196	Relay 24V Relay 24V Relay 24V
XU01	4822 242 72066	Ceramic Resonator, 8.00MHz
X601	4822 242 81536	Ceramic Resonator, 8.46MHz
PS11-L. P. F. CIRCUIT BOARD		
L601 L602	4822 153 70065 4822 153 70065	L. C. Filter 13.3KHz L. C. Filter 13.3KHz
PS51-SUB FUNCTION CIRCUIT BOARD		
PS51-CAPACITORS		
CS61 CS62	4822 122 40617 4822 122 40617	Ceramic Cap. 0.1μF +80% -20% Ceramic Cap. 0.1μF +80% -20%
PS51-CAPACITORS (COMMON)		
C***		Electrolytic Capacitor, ±20%: CS51~CS60
PS51-RESISTORS (COMMON)		
R***		Carbon Film Fixed Resistor, ±5% 1/6W: RS51~RS83, RS85, RS86
PS51-SEMICONDUCTORS		
QS51 QS52 QS53 QS55 QS56 QS57 QS58	4822 209 70044 4822 209 70044 4822 209 83631 4822 130 43818 4822 130 43818 4822 130 61227 4822 130 60588	IC NJM2058D IC NJM2058D IC NJM4558DD Transistor 2SC2878 (A) Transistor 2SC2878 (A) Transistor, digital DTA114ES Transistor, digital DTC114ES
PS51-MISCELLANEOUS		
JS51 JS52	4822 290 81407 4822 290 81407	Terminal, 6P; RCA Terminal, 6P; RCA
PS61-SUB FUNCTION CONNECT CIRCUIT BOARD		
JS53	4822 265 41287	Jack, 18P

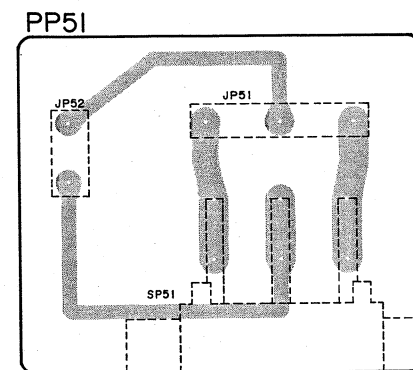
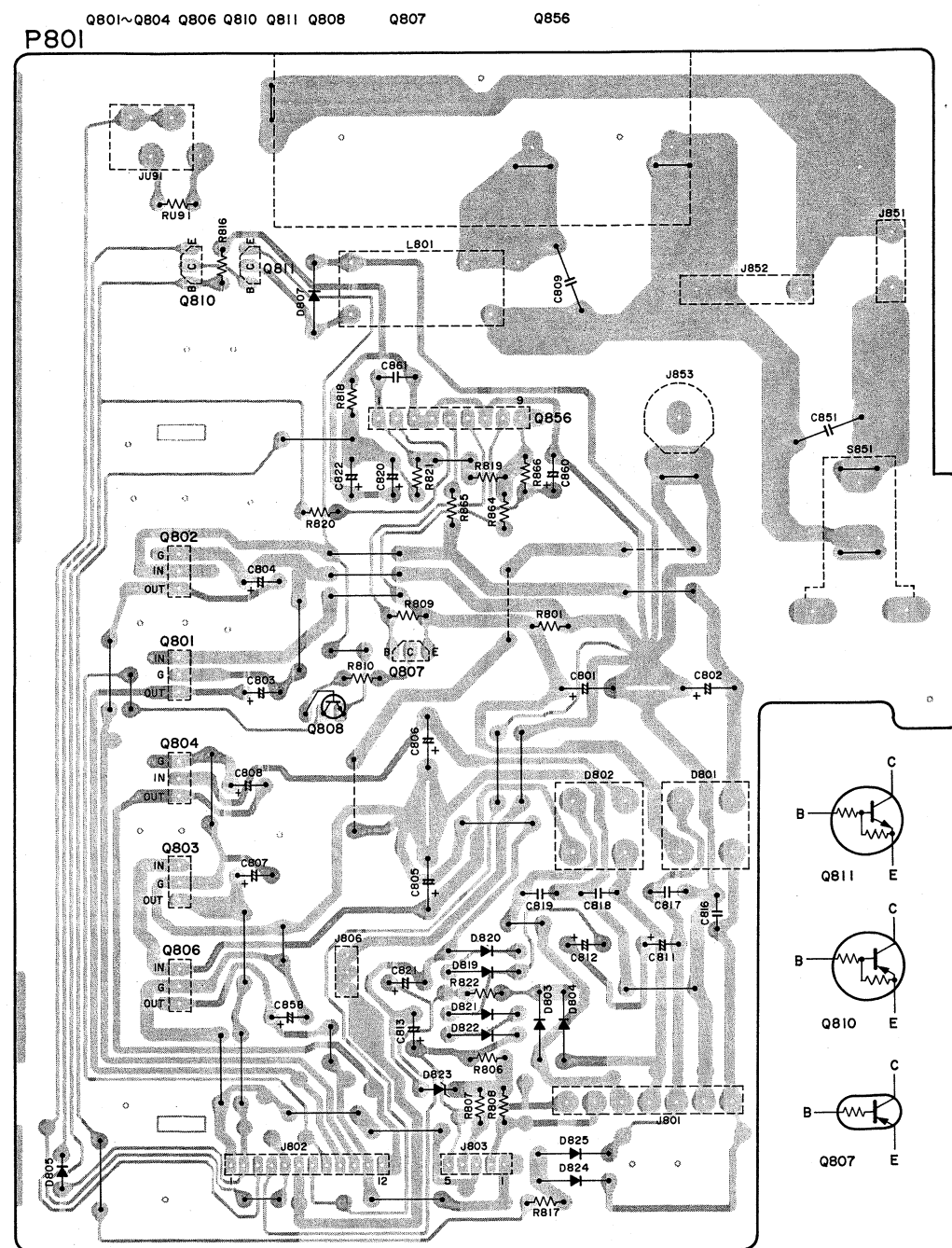
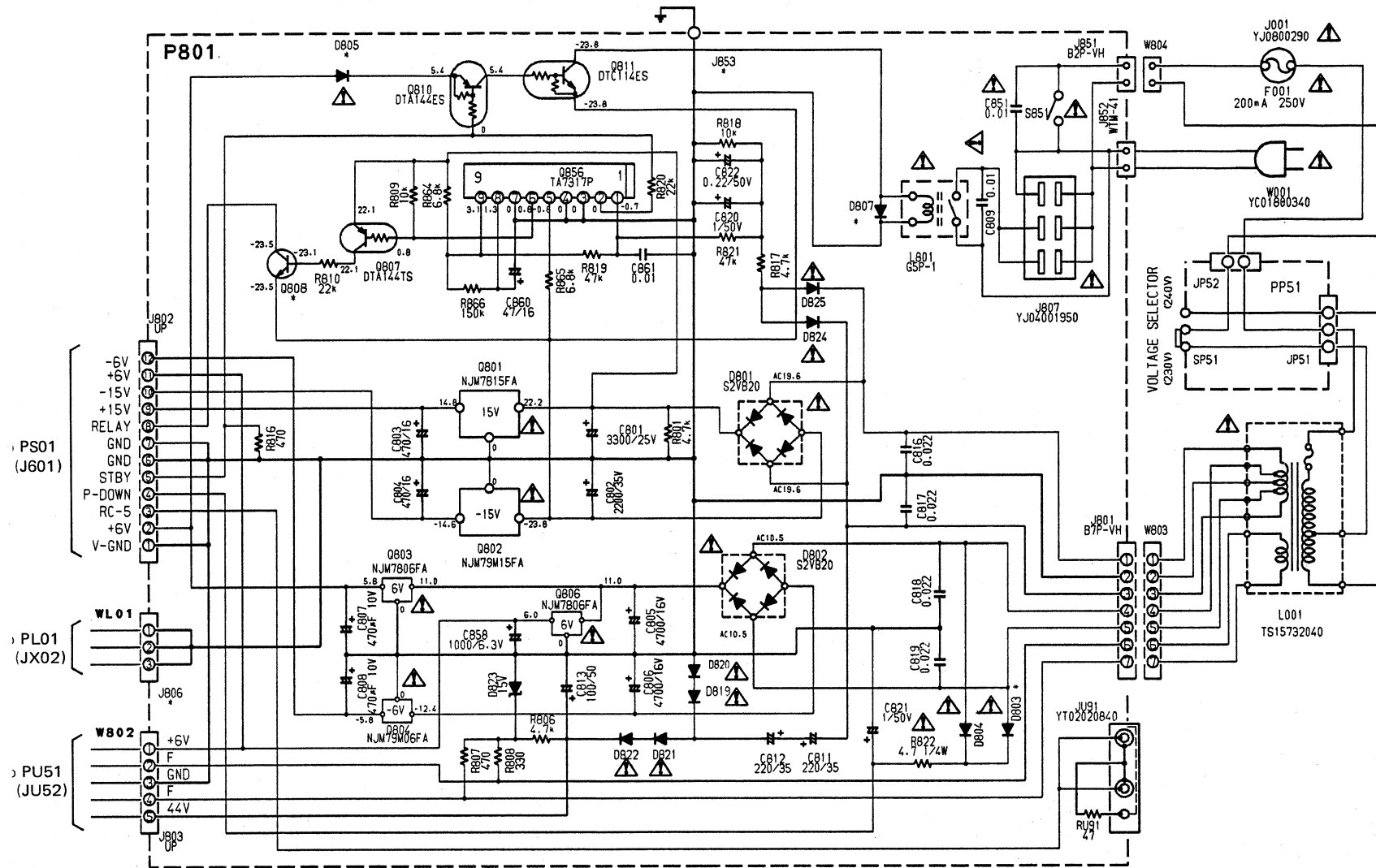
REF. DESIG.	PART NO.	DESCRIPTION
PU51-FRONT CIRCUIT BOARD		
PU51-CAPACITORS		
CL51 CL54 CL55 CL56 CL57 CL58 CL59	4822 124 22048 4822 124 80665 4822 124 80665 4822 122 40617 4822 122 40617 4822 122 30045 4822 122 40617	Elect 220μF 6.3V Elect 10μF 50V Elect 10μF 50V Ceramic 0.1μF +80% -20% Ceramic 0.1μF +80% -20% Ceramic 27pF ±5% Ceramic 0.1μF +80% -20%
CU51 CU52 CU53	4822 122 32486 4822 124 41242 4822 122 32486	Ceramic 0.01μF +80% -20% Elect 100μF 10V Ceramic 0.01μF +80% -20%
PU51-RESISTORS (COMMON)		
R***		Carbon Film Fixed Resistor, ±5% 1/6W: RL53, RL54, RL55, RL61, RL62, RU51~RU67, RU69, RU71, RU72, RU73
PU51-SEMICONDUCTORS		
DU52 DU53 DU54	4822 130 81715 4822 130 80326 4822 130 80326	L. E. D. LT3K44B L. E. D. LT3D8B L. E. D. LT3D8B
QU51 QU53 QU55	4822 130 42682 4822 218 10343 4822 209 63172	Transistor, digital DTA144ES Photo Unit, IR Sensor IC SED2000FVA
PU51-MISCELLANEOUS		
FU52 FU53	4822 158 60605 4822 158 60605	Ferrit Core Ferrit Core
JL51	4822 290 61181	Terminal, RCA; Pin
SU51 SU63 SU65 SU66 SU67	4822 276 20508 4822 276 20508 4822 276 20508 4822 276 20508 4822 276 20508	Push Switch (Tact) Push Switch (Tact) Push Switch (Tact) Push Switch (Tact) Push Switch (Tact)
VU51	4822 130 90924	Display Unit
P801-SUPPLY CIRCUIT BOARD		
P801-CAPACITORS		
C803 C804 C807 C808 C809 C811 C812 C813 C816 C817	4822 124 22277 4822 124 22277 4822 124 90371 4822 124 90371 4822 122 33276 4822 124 41538 4822 124 41538 4822 124 90355 4822 122 30103 4822 122 30103	Elect 470μF 16V Elect 470μF 16V Elect 470μF 10V Elect 470μF 10V Ceramic 0.01μF ±20% Elect 220μF 35V Elect 220μF 35V Elect 100μF 50V Ceramic 0.022μF +80% -20% Ceramic 0.022μF +80% -20%
C818 C819 C851 C858 C860 C861	4822 122 30103 4822 122 30103 4822 122 33276 4822 124 22694 4822 124 41539 4822 122 32486	Ceramic 0.022μF +80% -20% Ceramic 0.022μF +80% -20% Ceramic 0.01μF ±20% Elect 1000μF 6.3V Elect 47μF 16V Ceramic 0.01μF +80% -20%
P801-CAPACITORS (COMMON)		
C***		Electrolytic Capacitor, ±20%: C801, C802 C805, C806, C820, C821
P801-RESISTORS		
▲ R822	4822 111 90967	4.7 Ω ±5% 1/4W

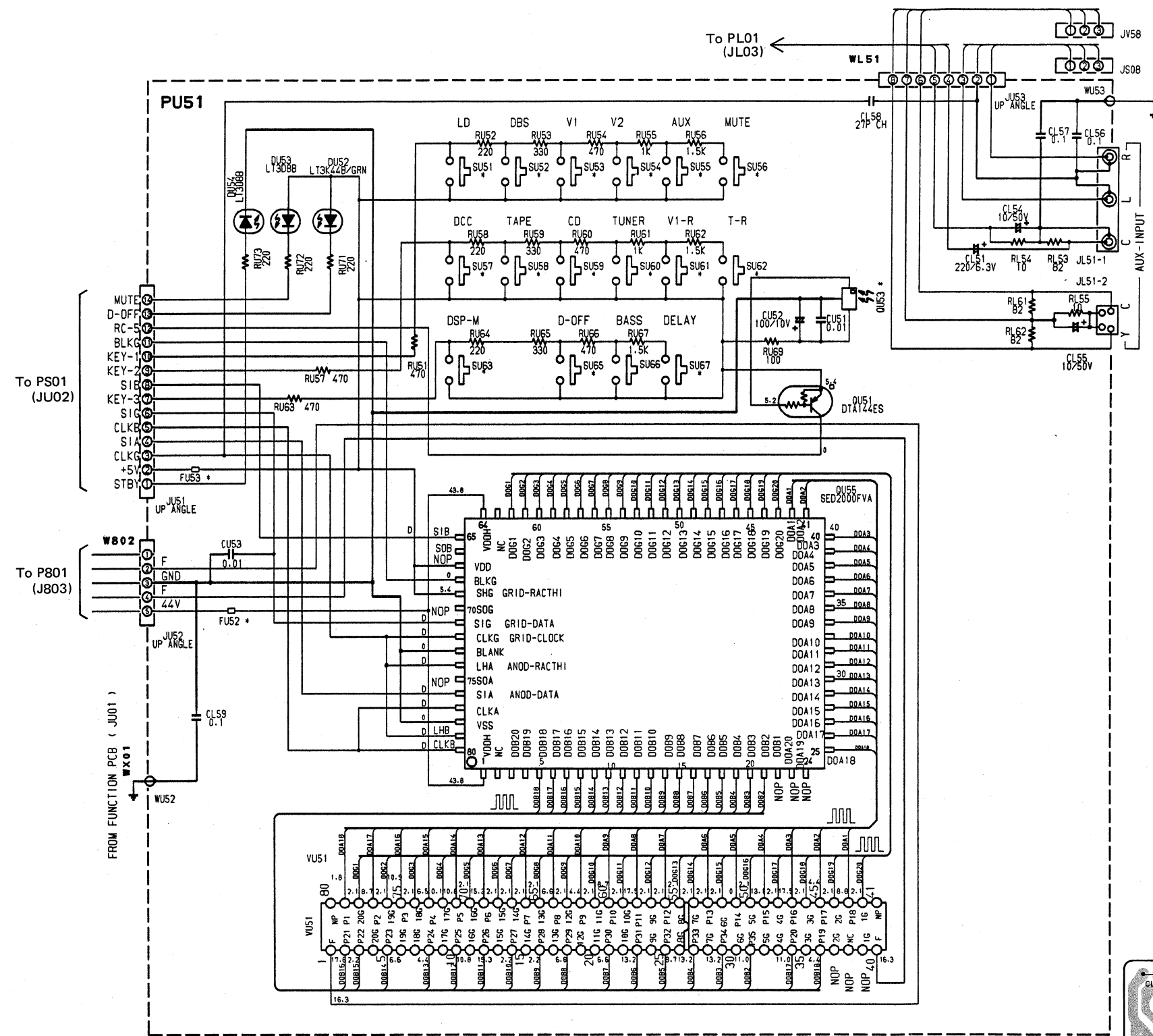
REF. DESIG.	PART NO.	DESCRIPTION
R***		P801-RESISTORS (COMMON) Carbon Film Fixed Resistor, ±5% 1/6W: RU91, R801, R806~R810, R816~R821, R864, R865, R866
P801-SEMICONDUCTORS		
▲ D801 ▲ D802 ▲ D803 ▲ D804 ▲ D805 ▲ D807 ▲ D819 ▲ D820 ▲ D821 ▲ D822	4822 130 80907 4822 130 80907 4822 130 32508 4822 130 32508 4822 130 33305 4822 130 32508 4822 130 32508 4822 130 32508 4822 130 32508 4822 130 32508	Diode 2SVB20 Diode 2SVB20 Diode RL103E/DSF10C Diode RL103E/DSF10C Diode 1SS176, etc. Diode RL103E/DSF10C Diode RL103E/DSF10C Diode RL103E/DSF10C Diode RL103E/DSF10C Diode RL103E/DSF10C
D823 ▲ D824 ▲ D825	4822 130 80322 4822 130 32508 4822 130 32508	Zener RD15JB3/ MTZJ16A Diode RL103E/DSF10C Diode RL103E/DSF10C
▲ Q801 ▲ Q802 ▲ Q803 ▲ Q804 ▲ Q806 Q807 Q808 Q810 Q811 Q856	4822 209 61848 4822 209 61526 4822 209 61533 4822 209 32555 4822 209 61533 4822 130 61187 4822 130 42298 4822 130 42682 4822 130 60588 4822 209 83312	IC NJM7815FA IC NJM79M15FA IC NJM7806FA IC NJM79M06FA, Regulator IC NJM7806FA Transistor, digital DTA144TS Transistor 2SC536SP, etc. Transistor, digital DTA144ES Transistor, digital DTC114ES IC TA7317P
P801-MISCELLANEOUS		
JU91	4822 290 61175	Terminal, RCA; 2P
▲ J807 J853	4822 265 31113 4822 403 53984	Jack, 3P; RCA Outlet Terminal
▲ L801	4822 280 20534	RELAY G5P-1
▲ S851	4822 276 12924	Push Switch, Power

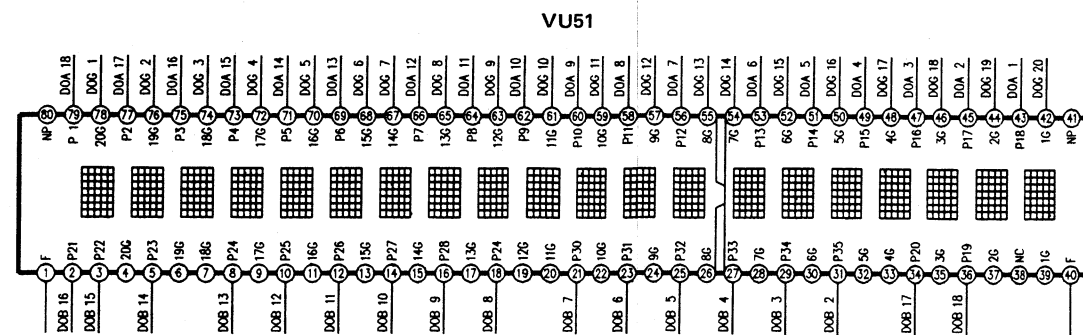
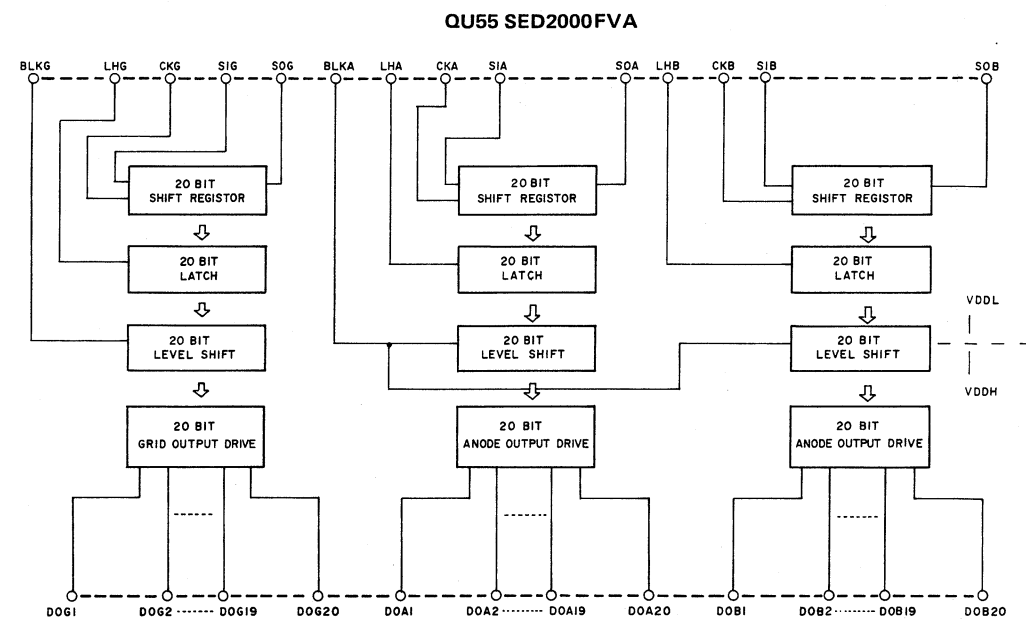
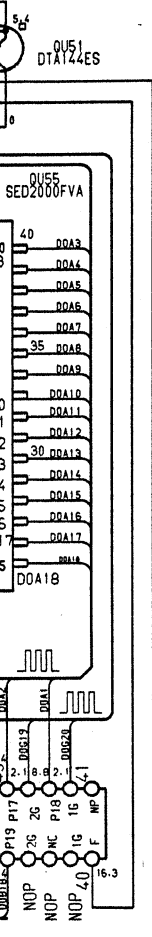
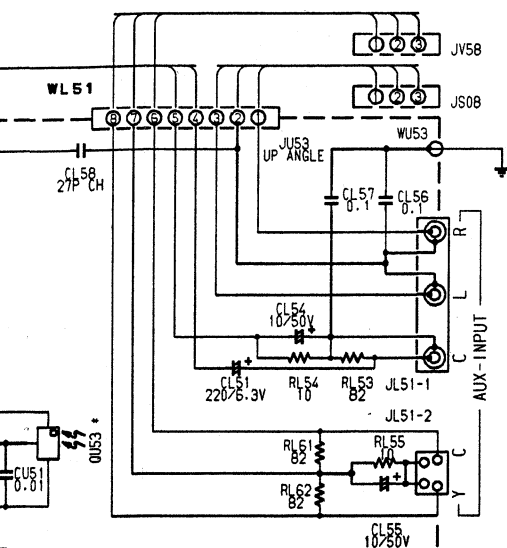
NOTE ON SAFETY :
Symbol ▲ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ▲ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

8. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern side)



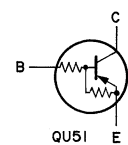
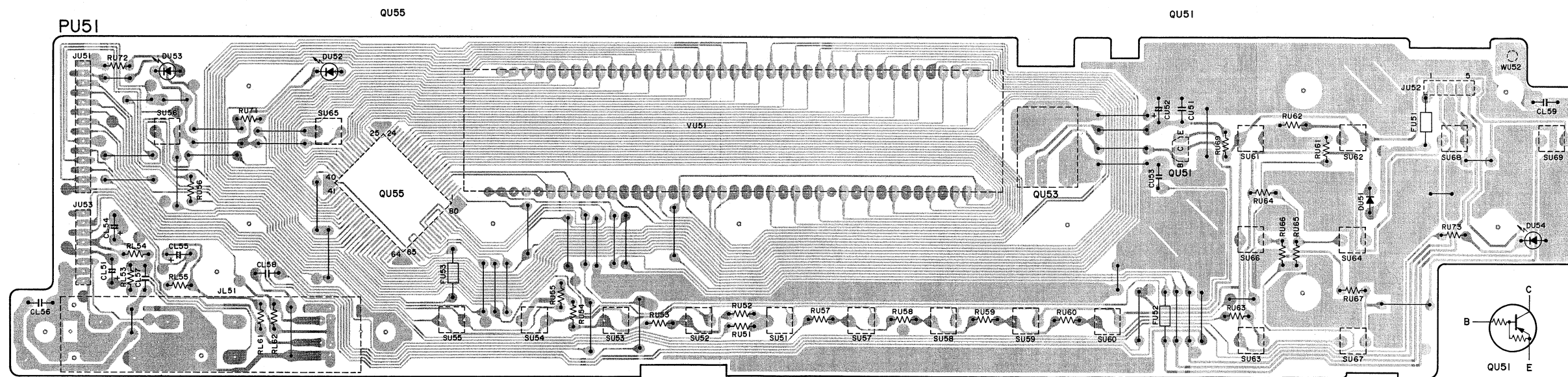




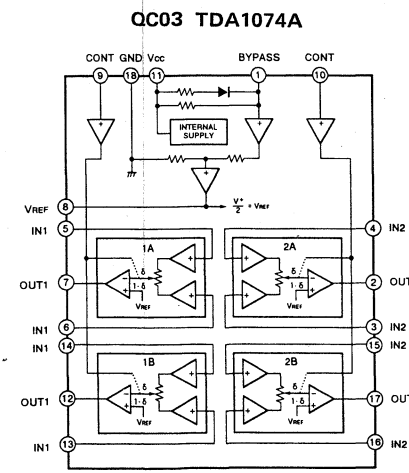
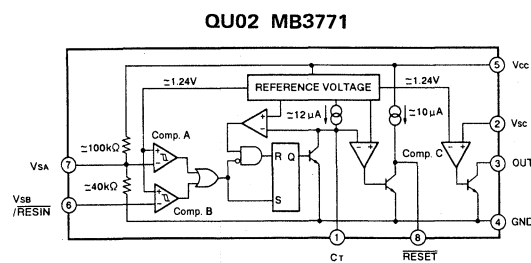
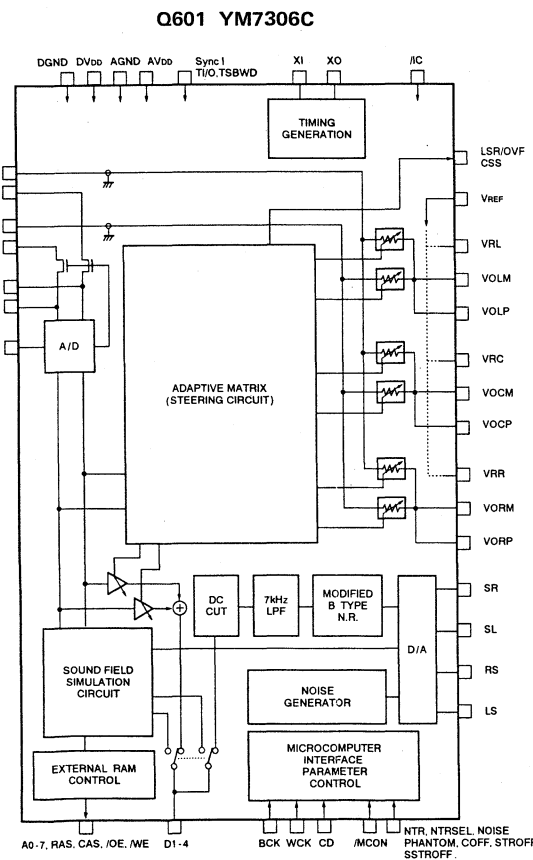
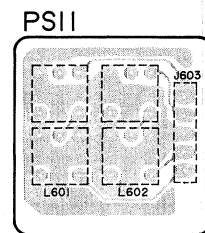
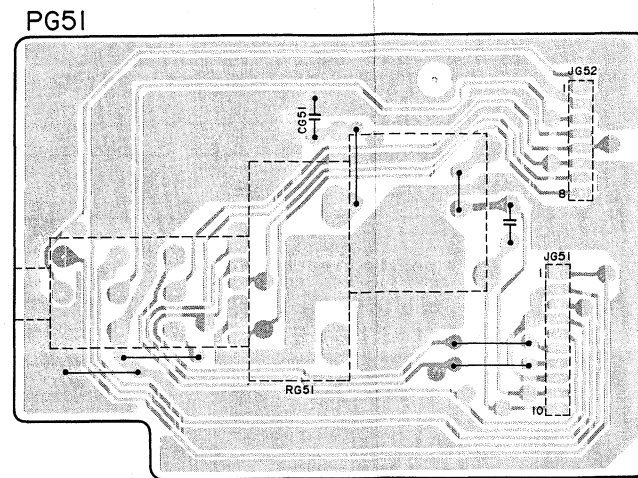
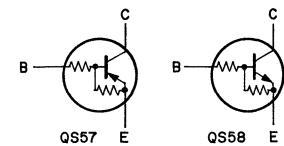
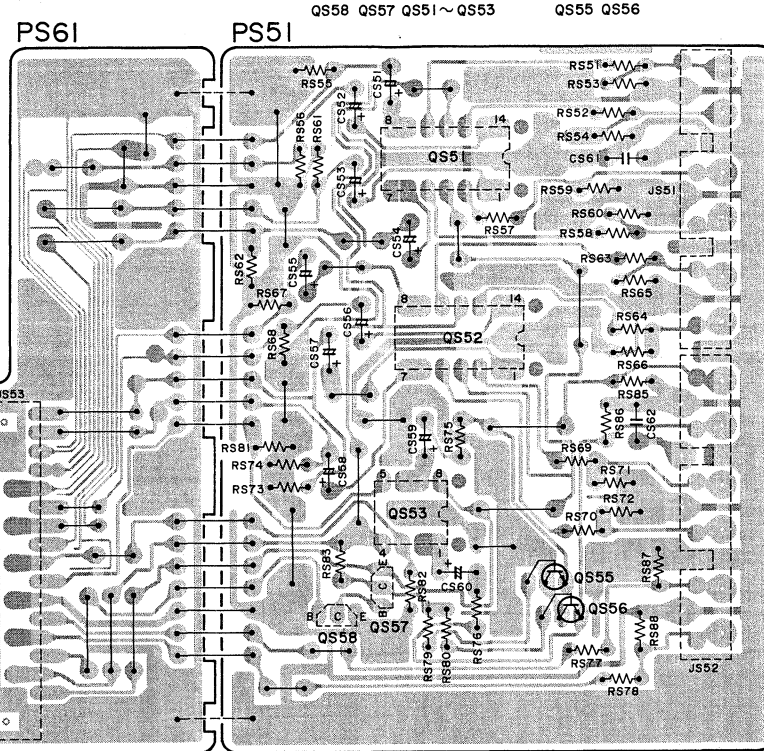
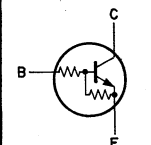
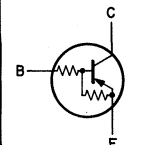
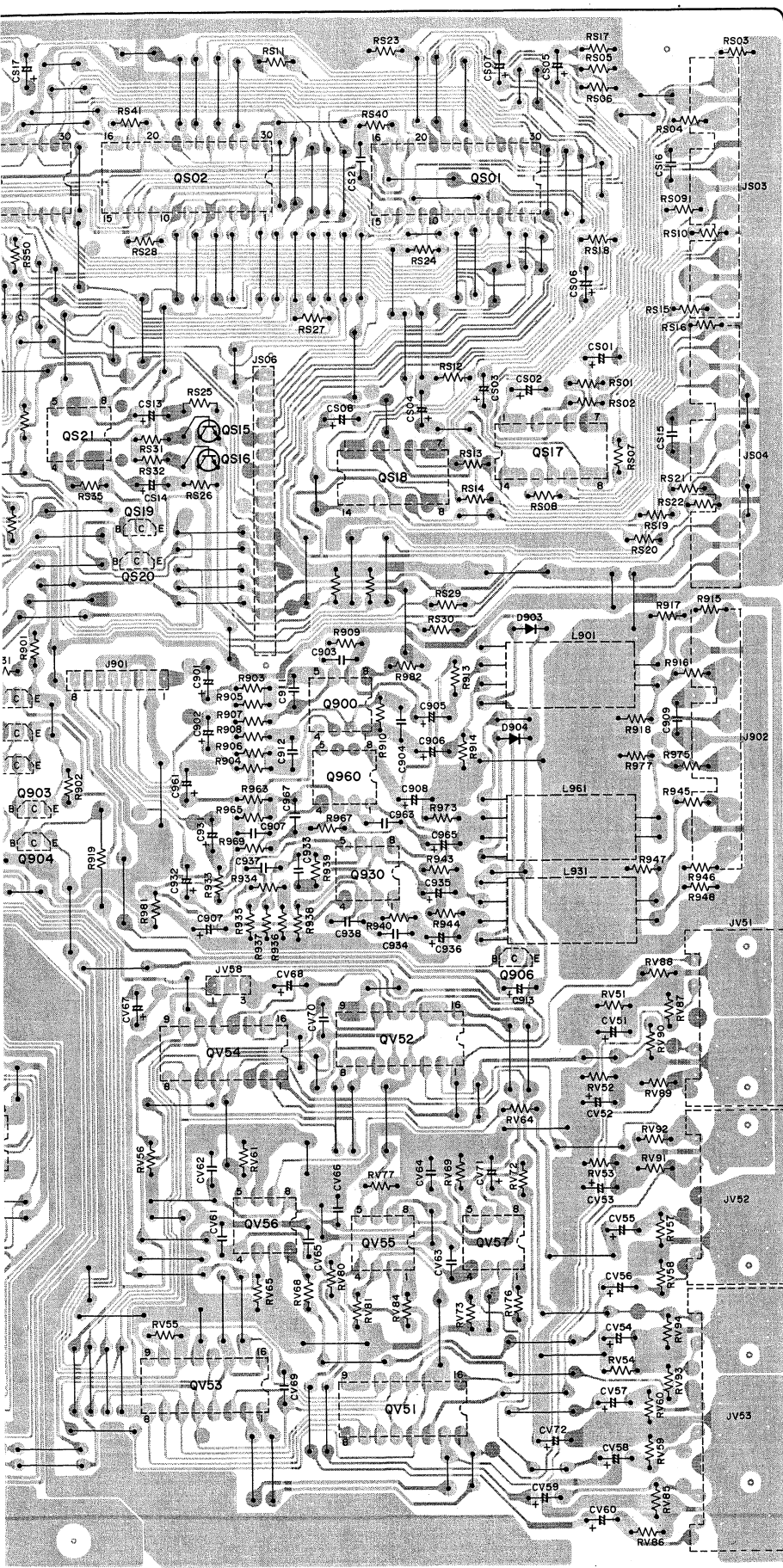


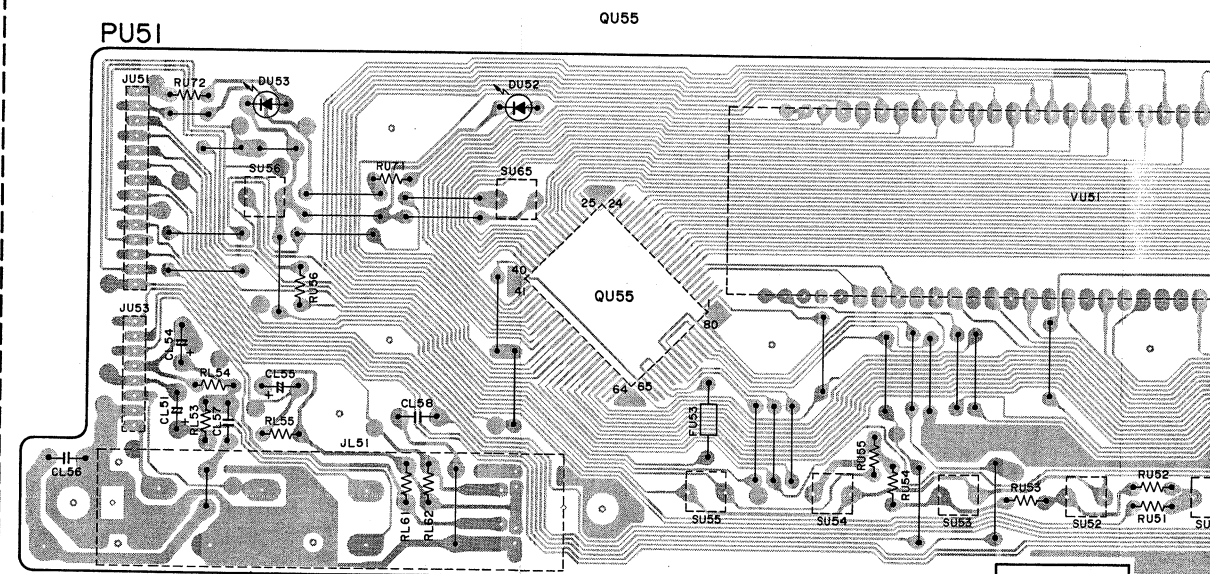
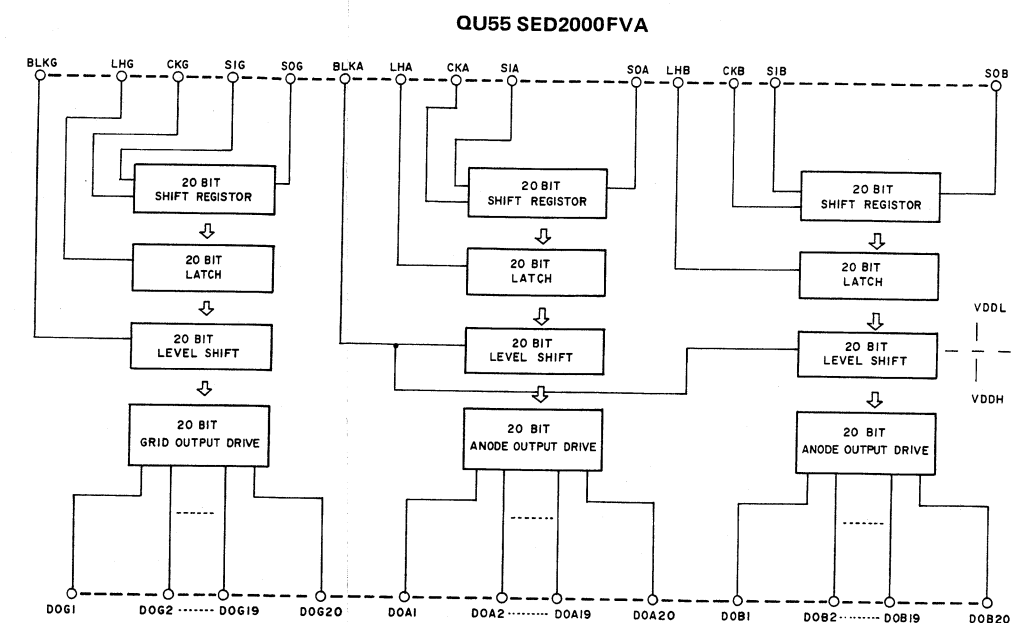
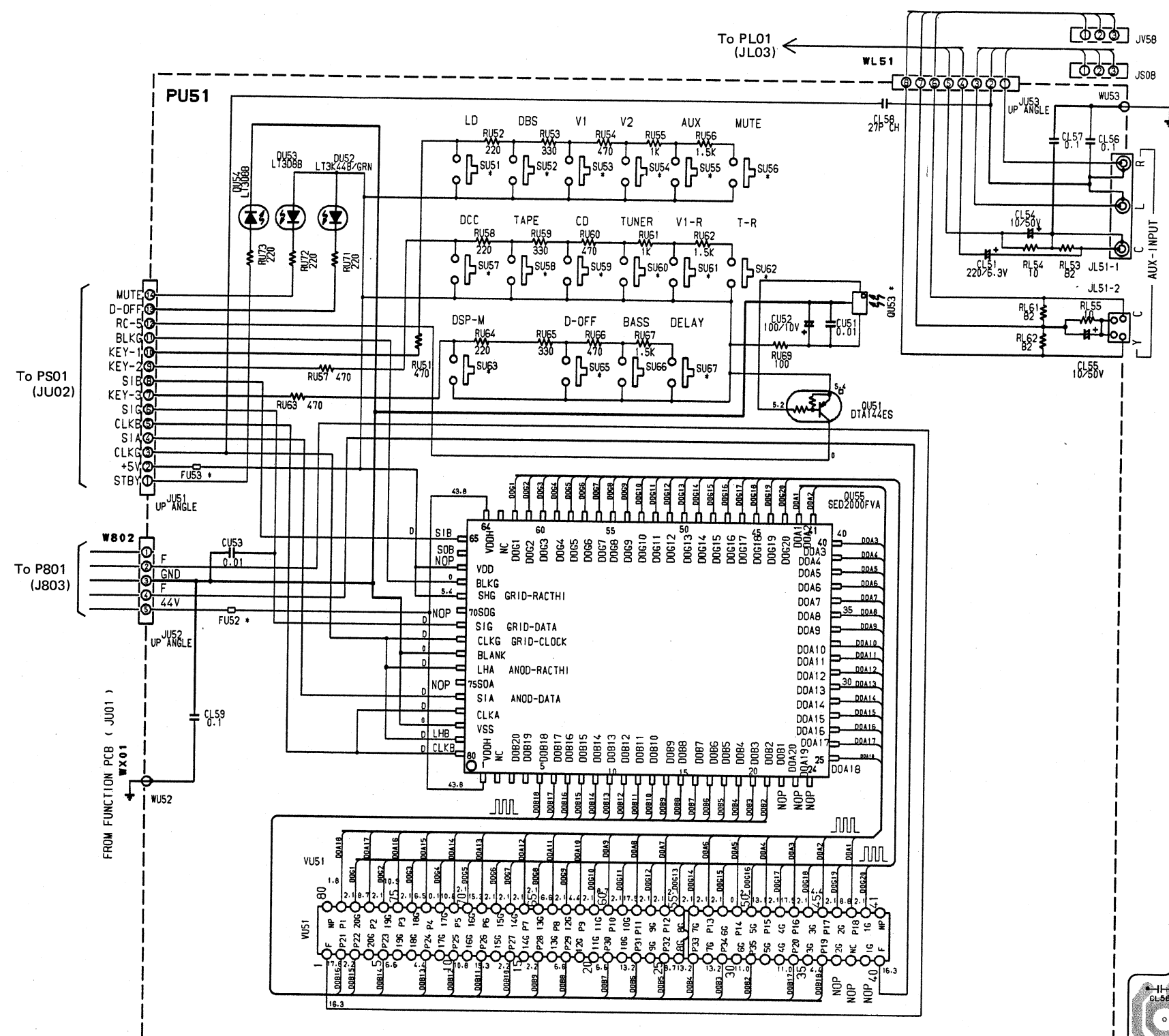
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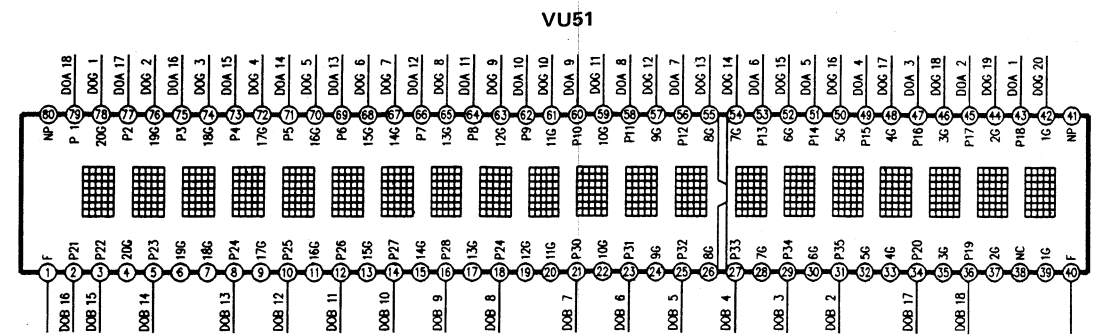
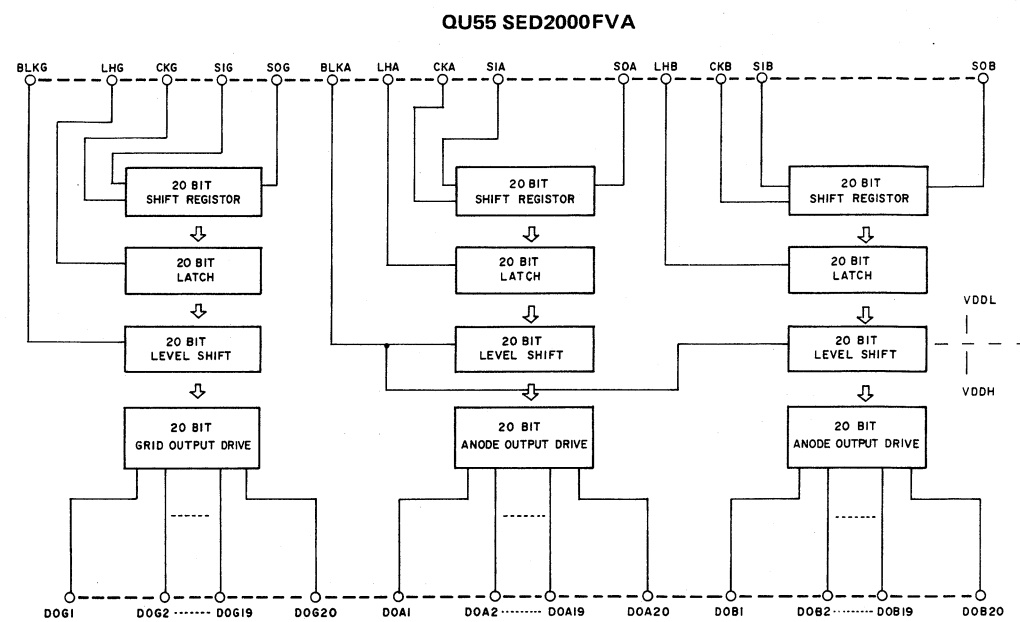
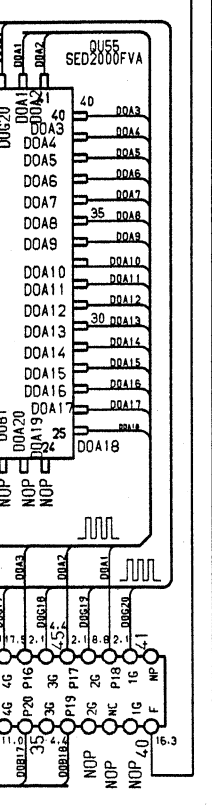
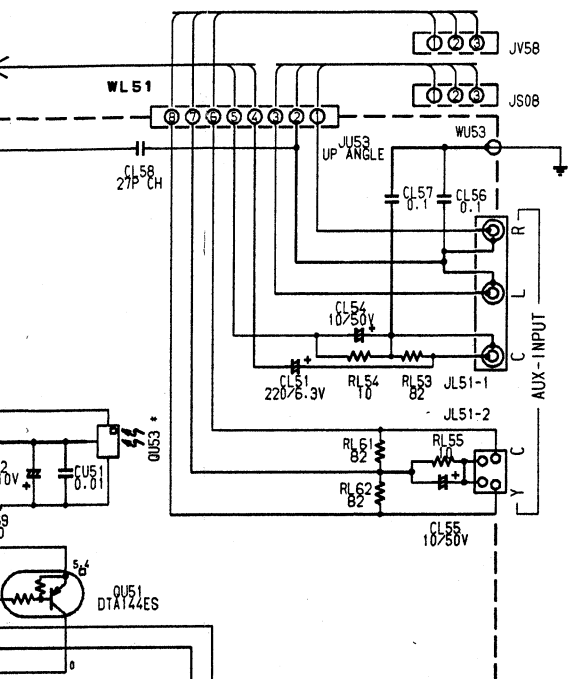
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26	27	28	29	30
31	32	33	34	35



Q03 Q05 Q06 Q07 Q08 Q09 Q10 Q11 Q12 Q13 Q14 Q15 Q16 Q17 Q18 Q19 Q20 Q21 Q22 Q23 Q24 Q25 Q26 Q27 Q28 Q29 Q30 Q31 Q32 Q33 Q34 Q35 Q36 Q37 Q38 Q39 Q40 Q41 Q42 Q43 Q44 Q45 Q46 Q47 Q48 Q49 Q50 Q51 Q52 Q53 Q54 Q55 Q56 Q57 Q58 Q59 Q60 Q61 Q62 Q63 Q64 Q65 Q66 Q67 Q68 Q69 Q70 Q71 Q72 Q73 Q74 Q75 Q76 Q77 Q78 Q79 Q80 Q81 Q82 Q83 Q84 Q85 Q86 Q87 Q88 Q89 Q90 Q91 Q92 Q93 Q94 Q95 Q96 Q97 Q98 Q99 Q100

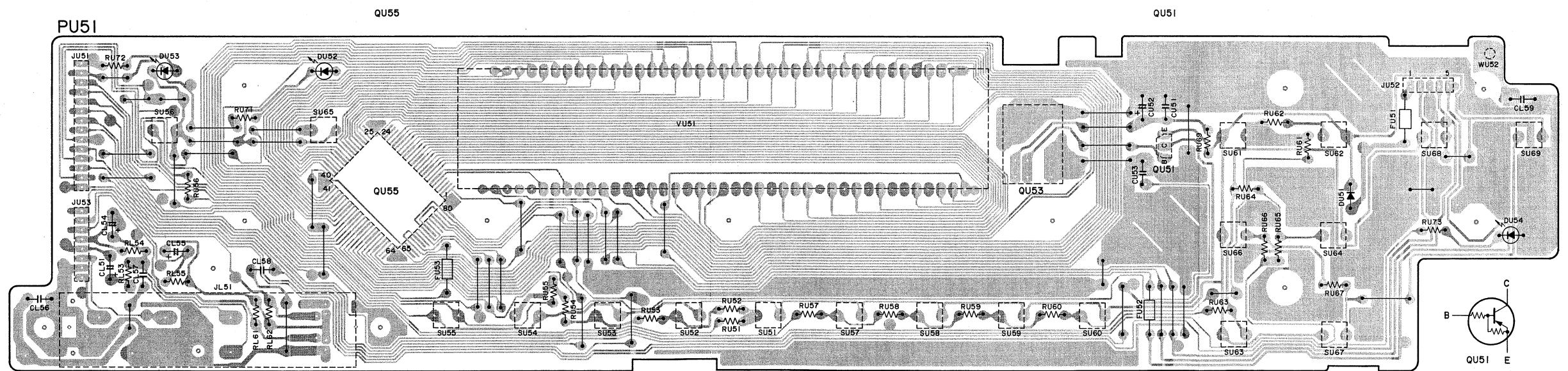




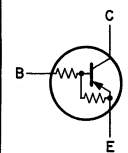
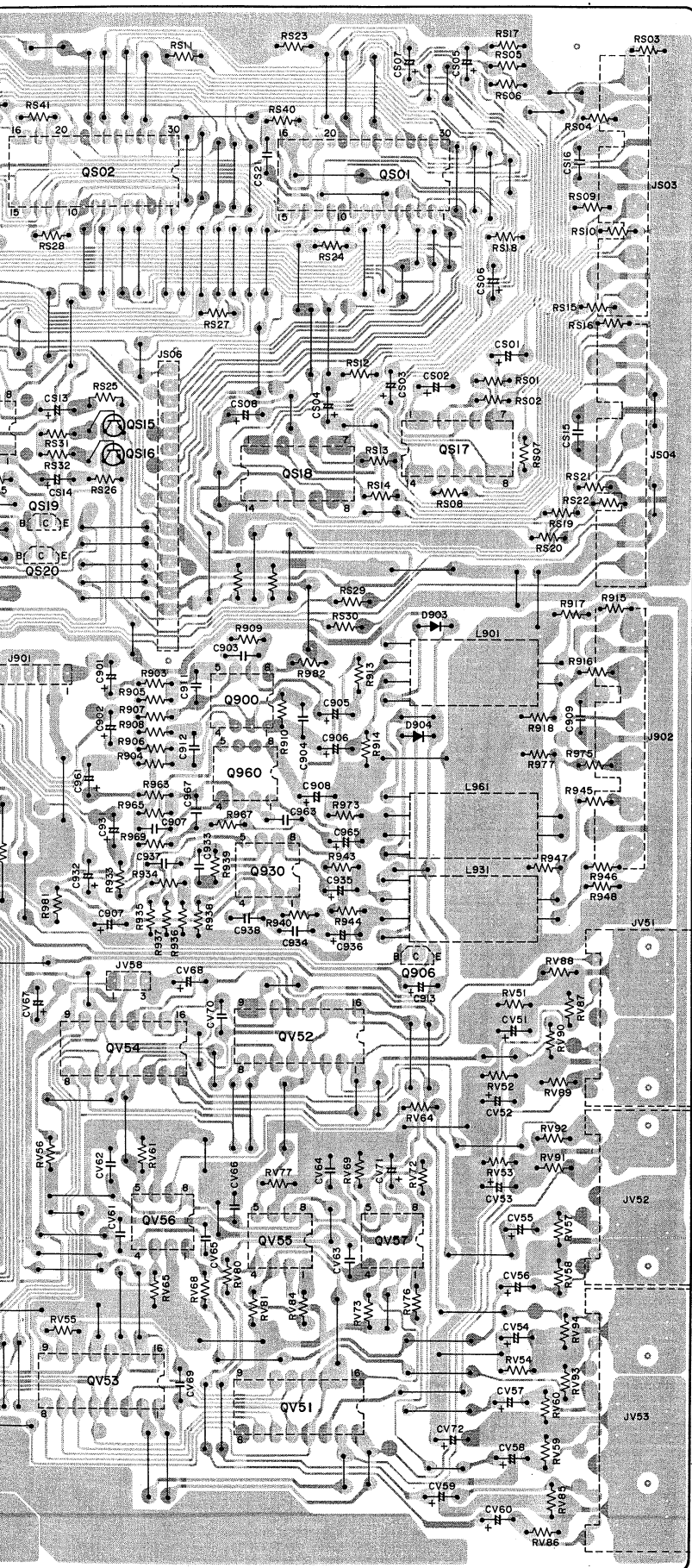


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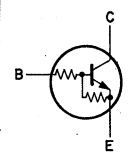
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16	17	18	19	20
21	22	23	24	25
26	27	28	29	30
31	32	33	34	35



QS02 QS18 QS01 QS17
 QS19 QS20 QS15 QS16 Q900 Q960 Q930
 QV53 QV54 QV56 QV55 QV52 QV51 QV57 Q906



Q608, Q505, Q506
 Q509, Q510, Q519
 Q505, Q617, Q620
 Q623, Q903, Q905

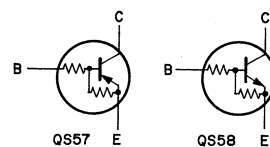
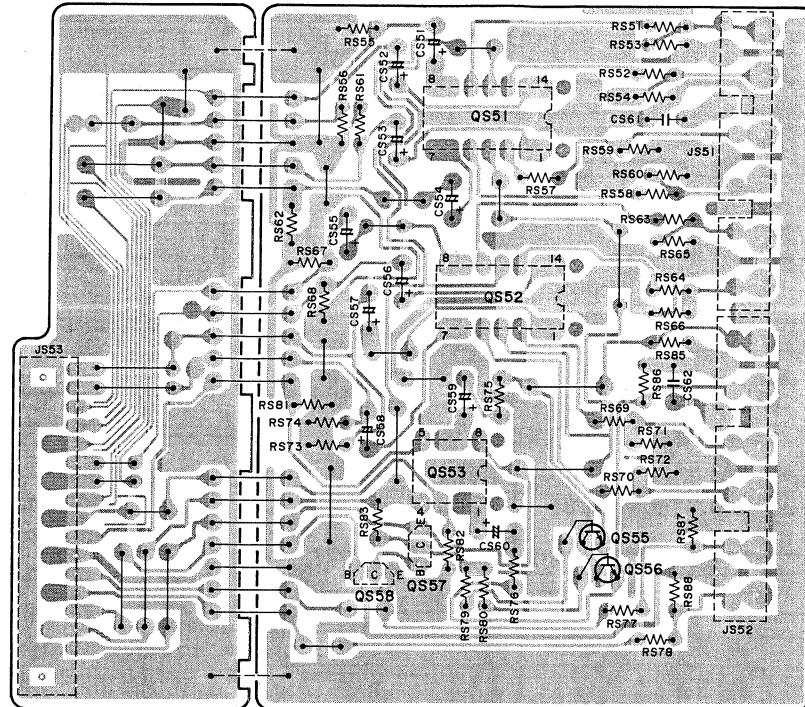


Q607, Q507, Q508
 Q511, Q512, Q520
 Q604, Q615, Q616
 Q618, Q619, Q621
 Q622, Q901, Q902
 Q904, Q906

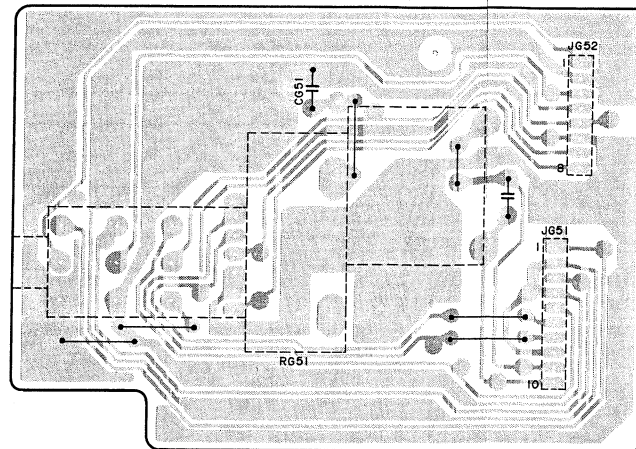
PS61

PS51

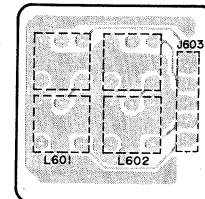
Q558 Q557 Q551~Q553 Q555 Q556



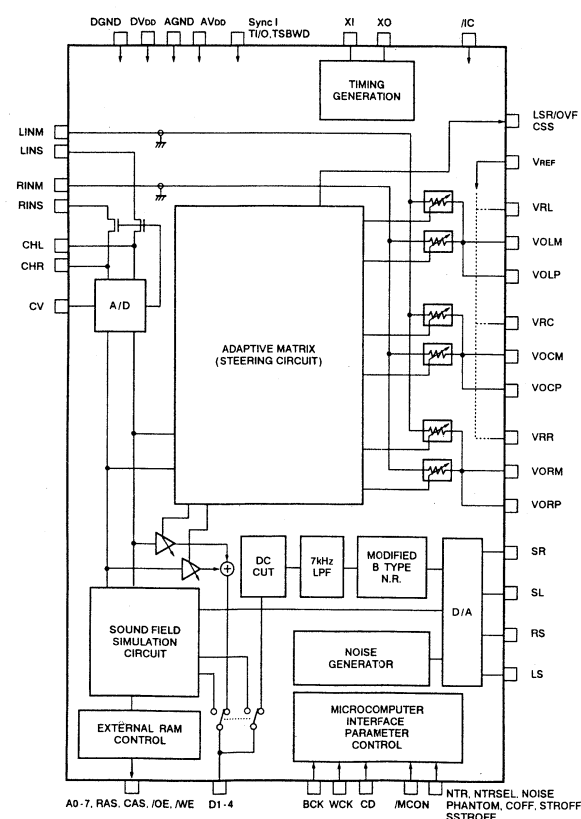
PG51



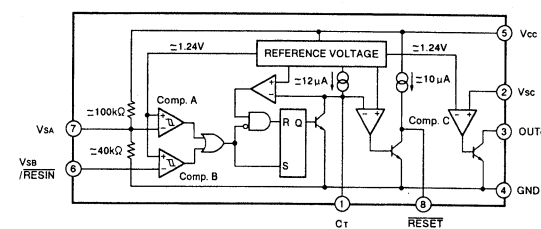
PS11



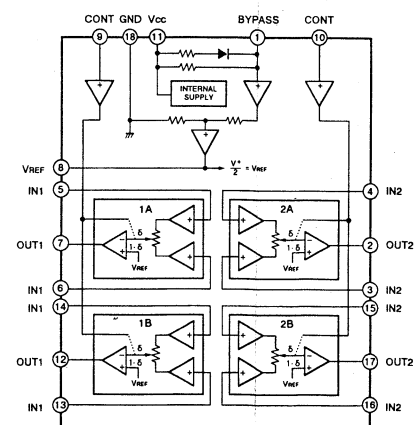
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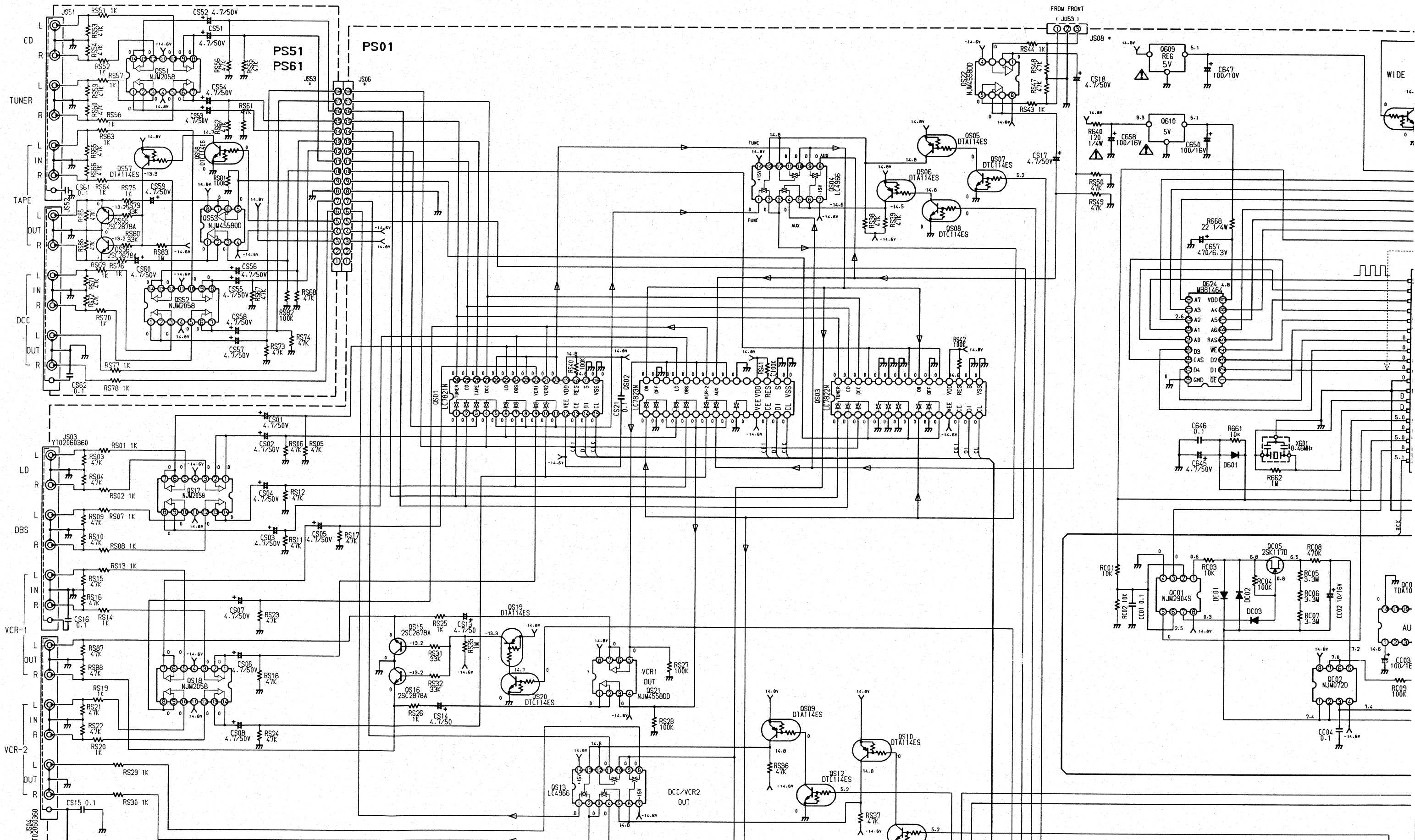
QU02 MB3771

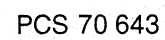


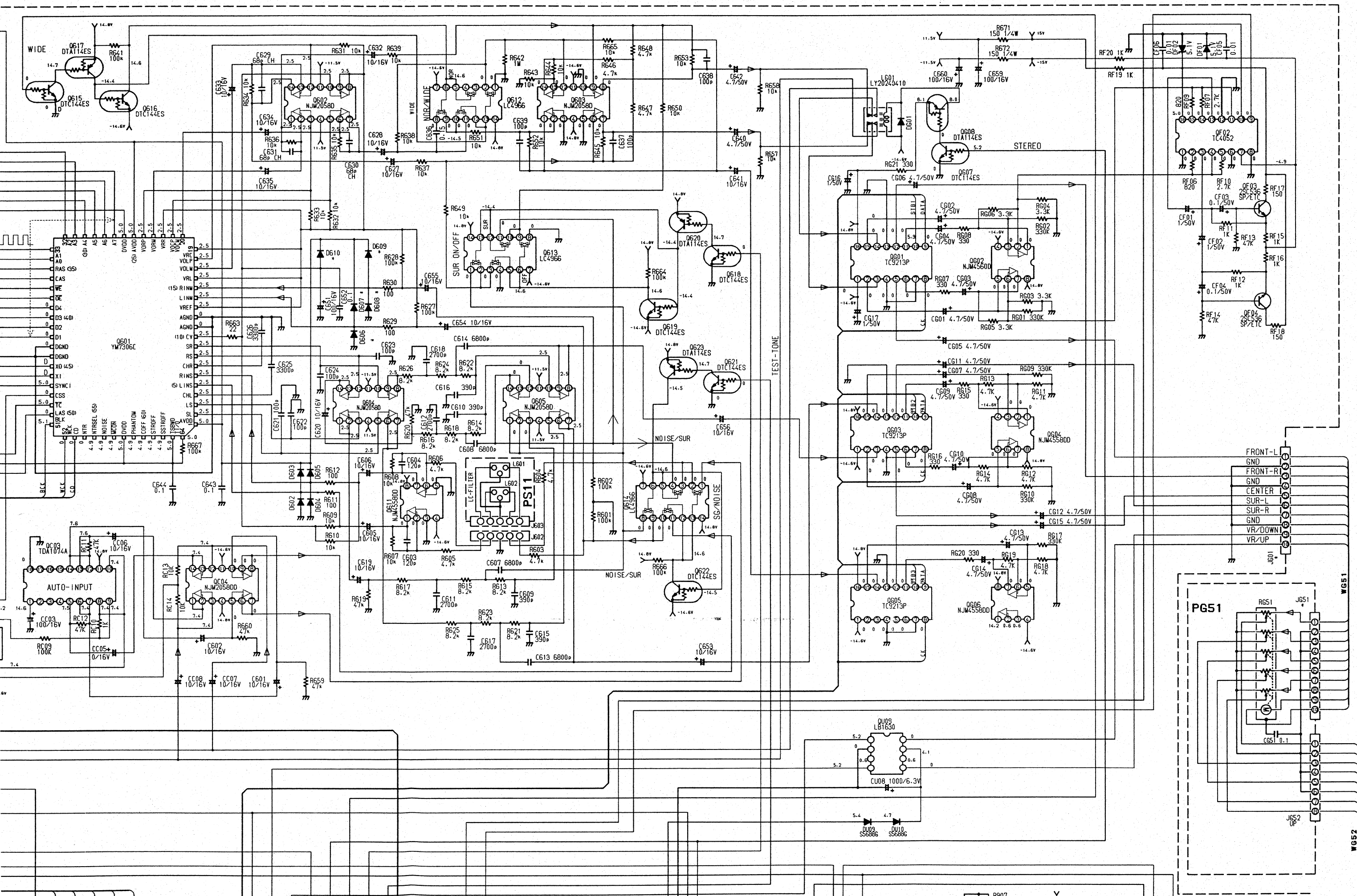
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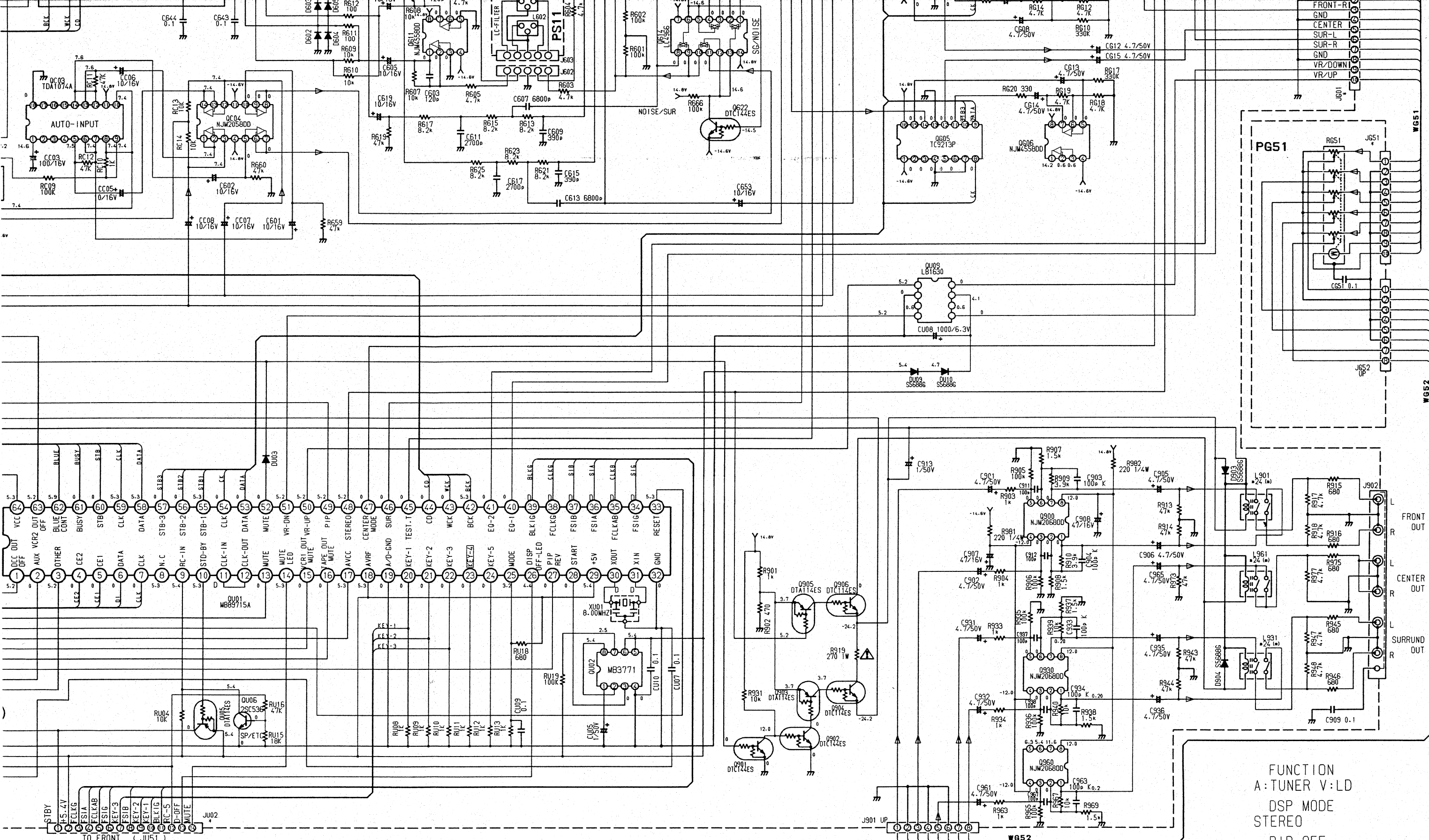


AV500 SCHEMATIC DIAGRAM









FUNCTION
 A:TUNER V:LD
 DSP MODE
 STEREO
 PIP OFF
 DELAY:0 ms
 VOL:MIN
 COPY:TAPE
 SOURCE→TAPE
 COPY:VCR1
 SOURCE→VCR1

D=